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NINTH ANNUAL REPORT
OF THE
Illinois State Bee-Keepers'
Association



Organized Feb. 26, 1891

SPRINGFIELD, ILLINOIS

Compiled by
JAMES A. STONE, Secretary,
R. R. 4, Springfield, Ill.

NINTH ANNUAL REPORT ^{JAN 24 1919}

— OF THE —

Illinois State Bee-Keepers' Association

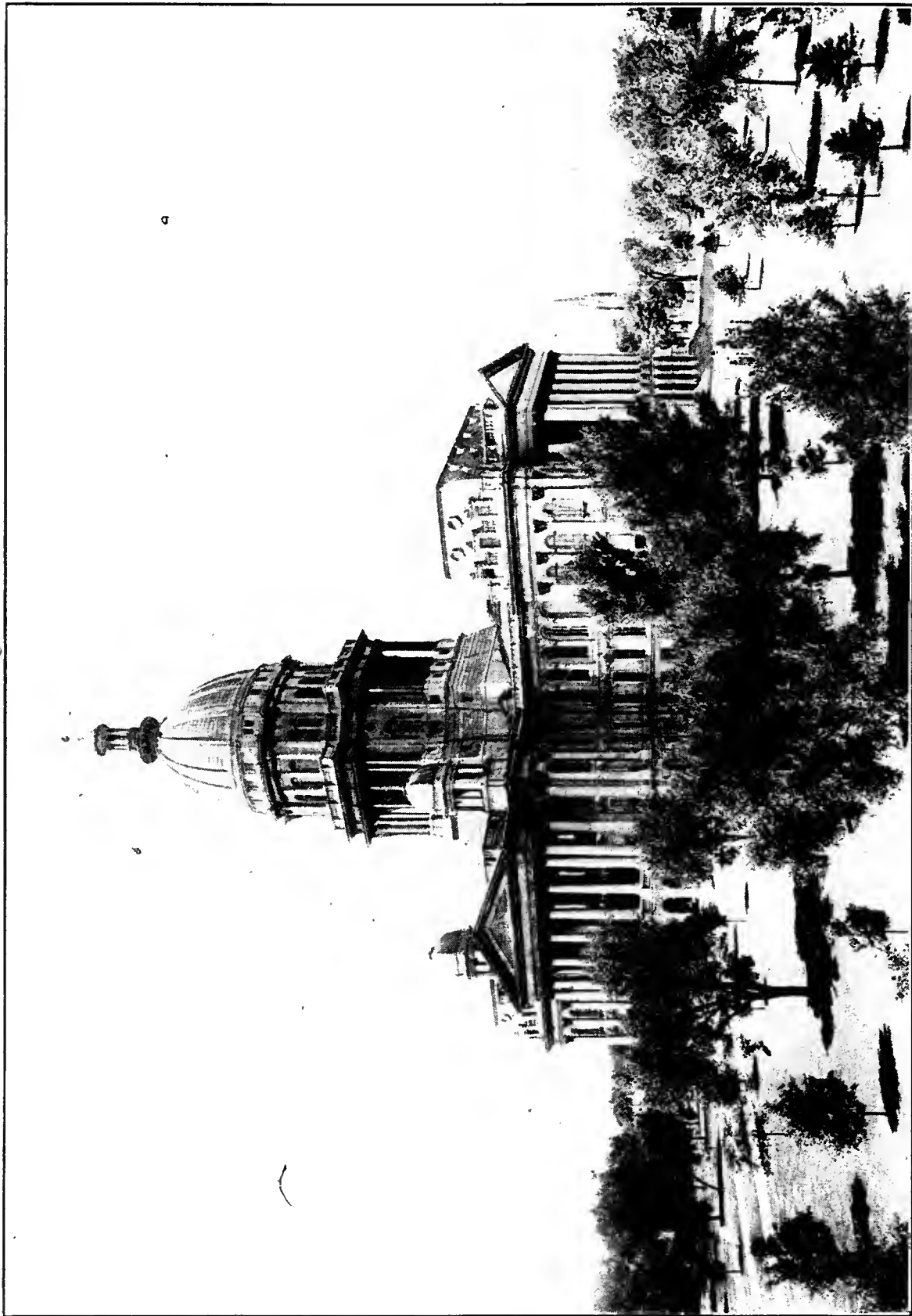
Organized Feb. 26, 1891,

— AT —

SPRINGFIELD, ILL.

COMPILED BY
JAMES A. STONE, SECRETARY,
R. R. 4, Springfield, Ill.

Springfield, Ill.,
Illinois State Register Print,
1910.



ILLINOIS STATE CAPITOL BUILDING AT SPRINGFIELD.
BEE-KEEPERS' MEETING PLACE.

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LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
R. R. 4, SPRINGFIELD, ILL., March 1, 1910. }

*To his Excellency, Charles S. Deneen, Governor of the State
of Illinois:*

SIR: I have the honor to transmit herewith the Ninth
Annual Report of the Illinois State Bee-Keepers' Association.

Respectfully submitted,

JAMES A. STONE, *Secretary.*



FATHER LANGSTROTH.
Inventor of the Movable Frame Hive.

OFFICERS

—OF THE—

Illinois State Bee-Keepers' Association

FOR 1910

C. P. DADANT.	President
Hamilton, Ill.	

A. L. KILDOW.	Putnam
State Fowl Brood Inspector.	

VICE-PRESIDENTS.

1st—AARON COPPIN.	Wenona
2d—J. W. BOWEN.	Jacksonville
3d—LOUIS WERNER.	Edwardsville
4th—W. B. MOORE.	Altona
5th—I. E. PYLES.	Putnam
JAMES A. STONE.	Secretary
CHAS. BECKER.	Treasurer
Pleasant Plains.	

List of members will appear in back of Report. Also Statistical Report.



J. Q. SMITH,
Late President of the Illinois State Bee Keepers' Association.

Formation of the Illinois State Bee-Keepers' Association.

Springfield, Ill., Feb. 26, 1891.

The Capitol Bee-Keepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State Association, and there being present bee-keepers from different parts of the State, by motion, a recess was taken in order to form such an Association.

P. J. England was chosen temporary chairman and C. E. Yocum temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a committee on constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State Association, and stated that it was his opinion that the bee-keepers should have a liberal appropriation for a State Apianian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 p. m. prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same, which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word "shall" for "may" in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word "ladies" and all that followed of the same section, which motion led to further discussion, and motion finally prevailed.

Section 2, Article II., relating to a quorum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V. by adding the words "Thirty days' notice having been given to each member." Prevailed.

Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution.

J. A. Stone moved that the Chair appoint a nominating committee of three on permanent organization. Prevailed.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:

For President—P. J. England, Fancy Prairie.

For Vice Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the committee on nominations. The motion prevailed, and the officers, as named by the committee were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, editor American Bee Journal, of Chicago, be made the first honorary member of the Association. Prevailed.

At this point Col. Chas. F. Mills said: "Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his action to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.
 Hon. J. M. Hambaugh, Spring.
 Hon. J. S. Lyman, Farmingdale.
 C. P. Dadant, Hamilton.
 Chas. Dadant, Hamilton.
 A. N. Draper, Upper Alton.
 S. N. Black, Clayton.
 Aaron Coppin, Wenona.
 Geo. F. Robbins, Mechanicsburg.
 J. W. Yocum, Williamsville.
 Thos. S. Wallace, Clayton.
 A. J. England, Fancy Prairie.
 P. J. England, Fancy Prairie.
 C. E. Yocom, Sherman.
 Jas. A. Stone, Bradfordton.

FIRST HONORARY MEMBER.

Thos. G. Newman, editor American Bee Journal, Chicago.

State of Illinois—Department of State

ISAAC N. PEARSON, Secretary of State.

To all to whom these Presents shall come—GREETING:

Whereas, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Bee-keepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

Now, Therefore, I, Isaac N. Pearson, Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Bee-Keepers' Association, is a legally organized corporation under the laws of the State.

In Testimony Whereof, I hereunto set my hand and cause to be affixed the great seal of State.

Done at the City of Springfield, this 27th day of February, in the [Seal] year of our Lord one thousand eight hundred and ninety one, and the Independence of the United States the one hundred and fifteenth.

I. N. PEARSON,
Secretary of State.

STATE OF ILLINOIS, }
County of Sangamon. } ss.

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled, "An Act Concerning Corporations," approved April

18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Bee-Keepers' Association.

2. The object for which it is formed is, to promote the general interests of the pursuit of bee-culture.

3. The management of the afore-said Association shall be vested in a board of three Directors, who are to be elected annually.

4. The following persons are hereby selected as the Directors, to control and manage said corporation for the first year of its corporate existence, viz.: Perry J. England, Jas. A. Stone, and Albert N. Draper.

5. The location is in Springfield, in the County of Sangamon, State of Illinois. [Signed,]

Perry J. England,
Jas. A. Stone,
Albert N. Draper.

STATE OF ILLINOIS, }
Sangamon County. } ss.

I, S. Mendenhall, a notary public in and for the County and State afore-said, do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the foregoing certificate, and severally acknowledged that they had executed the same for the purposes therein set forth.

In witness whereof, I have hereunto set my hand and seal the day and year above written.

[Seal] S. Mendenhall,
Notary Public.

CONSTITUTION AND BY-LAWS

—OF THE—

Illinois State Bee-Keepers' Association

CONSTITUTION

Adopted Feb. 26, 1891.

ARTICLE I.—Name.

This organization shall be known as The Illinois State Bee-Keepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II.—Object.

Its object shall be to promote the general interests of the pursuit of bee-culture.

ARTICLE III.—Membership.

Section 1. Any person interested in Apiculture may become a member upon the payment to the Secretary of an annual fee, of one dollar (\$1.00). (Amendment adopted at annual meeting, November, 1905): And any affiliating Association, as a body, may become members on the payment of an aggregate fee of twenty-five cents (25c) per member.

Sec. 2. Any persons may become hon-

orary members by receiving a majority vote at any regular meeting.

ARTICLE IV.—Officers.

Section 1. The officers of this Association shall be, President, Vice-President, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

Sec. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

Sec. 3. Vacancies in office — by death, resignation and otherwise — shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V.—Amendments.

This Constitution shall be amended at any annual meeting by a two-thirds vote of all the members present — thirty days' notice having been given to each member of the Association.

BY-LAWS

ARTICLE I.

The officers of the Association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this Association; to call for all reports of officers and committees; to

put to vote all motions regularly seconded; to count the vote at all elections, and declare the results; to decide upon all questions of order, and to deliver an address at each annual meeting.

ARTICLE III.

The Vice-Presidents shall be numbered, respectively, First, Second, Third, Fourth and Fifth, and it shall be

the duty of one of them, in his respective order, to preside in the absence of the President.

ARTICLE IV.

Section 1. It shall be the duty of the Secretary to report all proceedings of the Association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the Association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the Association; to cause the Constitution and By-Laws to be printed in appropriate form, and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the Association in the leading papers of the State, and in the bee journals at least four weeks prior to the time of such meeting.

Sec. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the As-

sociation, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

The meeting of the Association shall be, as far as practicable, governed by the following order of business:

- Call to order.
- Reading minutes of last meeting.
- President's address.
- Secretary's report.
- Treasurer's report.
- Reports of committees.
- Unfinished business.
- Reception of members and collection.
- Miscellaneous business.
- Election and installation of officers.
- Discussion.
- Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. Yocom,
Aaron Coppin,
Geo. F. Robbins

(Bill passed by the 46th General Assembly.)

Bee-Keepers' Association

- | | |
|--|---|
| § 1. For expenses of annual meetings, per annum, \$1,000; officers to receive no salary. | § 2. How drawn.
§ 3. Duty of Treasurer of Association. |
|--|---|

A BILL

For an act making an appropriation for the Illinois State Bee-Keepers' Ass'n.

Whereas, The members of the Illinois State Bee-Keepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the bee-keepers of the State; and,

Whereas, The importance of the industry to the farmers and fruit-growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning bee-keeping, therefore, to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote the industry in Illinois;

Section 1. Be it enacted by the People of the State of Illinois represented in the General Assembly: That there be and is hereby appropriated for the use of the Illinois State Bee-Keepers' Association the sum of one thousand dollars (\$1,000) per annum for the years 1909 and 1910. For the purpose of advancing the growth and developing the interests of the bee-keepers of Illinois, said sum to be expended under the direction of the Illinois State

Bee-Keepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Bee-Keepers' Association shall be entitled to receive any money compensation whatever for any services rendered for the same, out of this fund.

Sec. 2. That on the order of the President, countersigned by the Secretary of the Illinois State Bee-Keepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois State Bee-Keepers' Association for the sum herein appropriated.

Sec. 3. It shall be the duty of the treasurer of the Illinois State Bee-Keepers' Association to pay out of said appropriation, on itemized and receipted vouchers, such sums as may be authorized by vote of said organization on the order of the president, countersigned by the secretary, and make annual report to the Governor of all such expenditures, as provided by law.

Copy of a petition sent out to 1,200 bee-keepers in the State—to be returned to the Secretary during the year 1910.

We, the undersigners, most earnestly petition the 47th General Assembly to enact the following:

A BILL

For an act providing for the appointment of a State Inspector of Apiaries, and prescribing his powers and duties.

Whereas, The disease known as foul brood exists to a very considerable extent in various portions of this State, which, if left to itself, will soon exterminate the honey bees; and,

Whereas, The work done by an individual bee-keeper or by a State Inspector is useless so long as the official is not given authority to inspect and, if need be, to destroy the disease when found; and,

Whereas, There is a great loss to the bee-keepers and fruit-growers of the State each year by the devastating ravages of foul brood:

Section 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly: That the Governor shall appoint a State Inspector of Apiaries, who shall hold his office for the term of two years, and until his successor is appointed and qualified, and who may appoint one or more assistants, as needed, to carry on the inspection under his supervision.

Sec. 2. Said Inspector shall, when notified of the existence of foul brood, or any other contagious or infectious disease among apiaries, examine all such as are so reported, and all others in the same locality, and ascertain whether or not such disease exists, and, if satisfied of its existence, shall give the owner or the person who has the care of such apiaries full instructions as to the manner of treating them. In case the owner of a diseased apiary

shall refuse to treat his bees as directed, then the said Inspector may treat them at the owner's expense, or burn the diseased colonies, or their combs, as in his judgment seems best to prevent the spread of the disease.

Sec. 3. The Inspector shall, on or before the second Monday of December in each calendar year, make a report to the Governor and also to the Illinois State Bee-Keepers' Association, stating the number of apiaries visited; the number of those diseased and treated; the number of colonies of bees destroyed, and the expense incurred in the performance of his duties. Said Inspector shall receive \$4.00 for each day actually and necessarily spent in the performance of his duties, and be reimbursed for the money expended by him in defraying his expenses, out of the appropriation made to the Illinois State Bee-Keepers' Association; provided, that the total expenditure for such purposes shall not exceed \$600.00 per year.

Sec. 4. Any owner of a diseased apiary or appliances taken therefrom, who shall sell, barter or give away any such apiary, appliance, queens or bees from such apiary, expose other bees to the danger of contracting such disease, or refuse to allow the Inspector of Apiaries to inspect such apiary, or appliances, shall be fined not less than fifty dollars nor more than one hundred dollars.

Names	Senatorial District No.	Addresses	No. of Colonies of Bees

No.

CERTIFICATE OF

Illinois State Foul Brood Inspector of Apiaries.

Date.....191....

I have this day inspected the Apiary of:—

Mr.

P. O.

No. of colonies in Apiary.....

Last winter.....	{	In cellar.....	Loss.....
		Outside.....	Loss.....

191....Honey....	{	Lbs. Comb.....
		Lbs. Extracted.....

No. colonies apparently healthy.....

No. colonies diseased.....

Name of disease.....

Date bees to be treated.....

No. colonies or hives to be burned.....

Subscriber for

Remarks

.....

.....

Foul Brood Inspector of Illinois.

Code of Rules and Standards for Grading Apiarian Exhibits at Fairs, as Adopted by Illinois State Bee-Keepers' Association.

COMB HONEY.

Rule 1. Comb honey shall be marked on a scale of 100, as follows:

Quantity	40
Quality	40
Style of display.....	20
Rule 2. Points of quality should be:	
Variety	5
Clearness of capping.....	10
Completeness of capping.....	5
Completeness of filling.....	5
Straightness of comb.....	5
Uniformity	5
Style of section.....	5

Remarks: 1. By variety is meant different kinds, with regard to the sources from which the honey is gathered, which adds much interest to an exhibit.

2. By clearness of capping is meant freedom from travel stain and a water soaked appearance. This point is marked a little high, because it is a most important one. There is no better test of the quality of comb honey than the appearance of the cappings. If honey is taken off at the proper time, and cared for as it should be, so as to preserve its original clear color, body and flavor will take care of themselves, for excellence in the last two points always accompanies excellence in the first. Clover and basswood honey should be white; heartsease, a dull white tinged with yellow; and Spanish needle, a bright yellow.

3. By uniformity is meant closeness of resemblance in the sections composing the exhibit.

4. By style is meant neatness of the sections, freedom from propolis, etc. Under this head may also be considered the size of the section. The $4\frac{1}{4} \times 4\frac{1}{4}$ being the standard, should take the preference over all others, and $1\frac{7}{8}$ to 2 inches in width over narrow ones.

5. Honey so arranged as to show every section should score the highest in style of display, and everything that may add to the tastiness and attractiveness of an exhibit should be considered.

EXTRACTED HONEY.

Rule 1. Extracted honey should be marked on a scale of 100, as follows:

Quantity	40
Quality	45
Style of display.....	15

Rule 2. The points of quality should be:

Variety	10
Clearness of color.....	5
Body	5
Flavor	5
Style of package.....	10
Variety of package.....	5
Finish	5

Remarks: 1. Light clover honey pouring out of a vessel is a very light straw color; Spanish needle, a golden hue, and dark clover honey, a dull amber.

2. Style of package is rated a little high, not only because in that consists the principal beauty of an exhibit of extracted honey, but also because it involves the best package for marketing. We want to show honey in the best shape for the retail trade, and that, in this case, means the most attractive style for exhibition. Glass packages should be given the preference over tin; flint glass over green, and smaller vessels over larger, provided the latter run over one or two pounds.

3. By variety of package is meant chiefly different sizes; but small pails for retailing, and, in addition, cans or kegs (not too large) for wholesaling, may be considered. In the former case, pails painted in assorted colors, and lettered "Pure Honey," should be given the preference.

4. By finish is meant capping, labeling, etc.

5. Less depends upon the manner of arranging an exhibit of extracted than of comb honey, and for that reason, as well as to give a higher number of points to style of package, a smaller scale is allowed for style of display.

SAMPLES OF COMB AND EXTRACTED HONEY.

Rule 1. Single cases of comb honey, entered as such for separate premiums, should be judged by substantially the same rules as those given for a display of comb honey, and samples of extracted, by those governing displays of extracted honey.

Rule 2. Samples of comb or extracted honey, as above, may be considered as part of the general display in their respective departments.

GRANULATED HONEY.

Rule 1. Candied or granulated honey should be judged by the rules for extracted honey, except as below.

Rule 2. The points of quality should be:

Variety	10
Fineness of grain.....	5
Color	5
Flavor	5
Style of package.....	10
Variety of package.....	5
Finish	5

Rule 3. An exhibit of granulated honey may be entered or considered as part of a display of extracted honey.

NUCLEI OF BEES.

Rule. Bees in observation hives should be marked on a scale of 100, as follows:

Color and markings.....	30
Size of bees.....	30
Brood	10
Queen	10
Quietness	5
Style of comb.....	5
Style of hive.....	10

Remarks: 1. Bees should be exhibited only in the form of single frame nuclei, in hives or cages with glass sides.

2. Italian bees should show three or more bands, ranging from leather color to golden or light yellow.

3. The markings of other races should be those claimed for those races in their purity.

4. A nucleus from which the queen is omitted should score zero on that point.

5. The largest quantity of brood in all stages or nearest to that should score the highest in that respect.

6. The straightest, smoothest and most complete comb, with the most honey consistent with the most brood, should score the highest in that respect.

7. That hive which is neatest and best made and shows the bees, etc., to the best advantage should score the highest.

QUEEN BEES.

Rule. Queen bees in cages should be marked on a scale of 100, as follows:

Quantity	40
Quality and variety.....	40
Style of caging and display....	20

Remarks: 1. The best in quality consistent with variety should score the highest. A preponderance of Italian queens should outweigh a preponderance of black ones, or, perhaps, of any other race or strain; but sample queens of any or all varieties should be duly considered. Under the head of quality should also be considered the attendant bees. There should be about a dozen with each queen.

2. Neatness and finish of cages should receive due consideration, but the principal points in style are to make and arrange the cages so as to show the inmates to the best advantage.

BEESWAX.

Rule. Beeswax should be marked on a scale of 100, as follows:

Quantity	40
Quality	40
Style of display.....	20

Remarks: 1. Pale, clear, yellow specimens should score the highest, and the darker grades should come next in order.

2. By style is meant chiefly the forms in which the wax is molded and put up for exhibition. Thin cakes or small pieces are more desirable in the retail trade than larger ones. Some attention may be given to novelty and variety.

Foul Brood and Other Diseases of Bees

(Republished by permission of N. E. France, Foul Brood Inspector of Wisconsin.)

Foul brood—*bacillus alvei*—is a fatal and contagious disease among bees, dreaded most of all by bee-keepers. The germs of disease are either given to the young larval bee in its food when it hatches from the egg of the queen-bee, or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker-bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the *British Bee Journal*, recently wrote: "The only visible hindrance to the rapid expansion of the bee industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make bee-keeping a hazardous occupation."

Canada's foul brood inspector, in 1890 to 1892, reported 2,395 cases, and in a later report for 1893 to 1898, that 40 per cent of the colonies inspected were diseased. Cuba is one of the greatest honey-producing countries, and was lately reported to me by a Wisconsin bee-keeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known whole apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I, myself, took, in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apiary? Dead from foul brood." Cuba, in 1901, exported 4,795,600 pounds of honey, and 1,022,897 pounds of beeswax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin I know of several quite large piles of empty hives, where also many other apiaries where said disease had gotten a strong foothold.

By the kindness of the Wisconsin bee-keepers, and, in most cases, by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other States and countries, so we may expect some new cases to develop until all the States shall enact such laws as will prevent further spread of the same. Arizona, New York (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897), and Michigan (1901), have State inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease, is considered the best, and many other States are now making efforts to secure a like law.

There are several experimental apiaries in Canada, under control of the Ontario Agricultural College; also a few in the United States, especially in Colorado, that have done great work for the bee-keeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Bee-Keepers' Association has asked that an experimental apiary might be had on the Wisconsin Experimental Farm, but at present there are so many departments asking for aid that I fear it may be some time before bee-culture will be taken up.

Causes of Foul Brood.

1. Many writers claim foul brood

originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proven beyond a doubt that chilled or common dead brood does not produce foul brood. I have, in the last five years, also proven his statements to be true in Wisconsin, but I do believe such conditions of dead brood are the most favorable places for lodgment and rapid growth of diseases. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber-bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. The foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honey-flow, but at the close of the honey season, or at time of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs, it is the duty of every bee-keeper to keep everything carefully protected. Hive-entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew a case where a bee hatched from a brood cell that had ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side walls, bees will store honey therein; the queen will deposit eggs, or the cell may be filled with pollen, or bee-bread, as some call it. Said honey, or pollen, when it comes in contact with those germs of disease, or the food given to the young bee, if in the proper temperature, said germs of disease will grow and develop rapidly.

Causes of Contagion.

I fully believe that if the history of foul brood in Wisconsin were known,

nearly every case could be traced to contagion from diseased combs, honey or from home diseased queen-breeders' cages. Here are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sale. Several law suits have resulted in the settlement of some of the cases.

2. Brood-combs and various implements from diseased hives, used by other bee-keepers, and borrowed articles.

3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives, so that neighbor's bees might get the honey. From those combs I lined robber bees to seven other apiaries, and each time became diseased and were treated.

4. Robber bees working on empty honey packages in the back yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far distant States, even Cuba.

5. Loaning of hives, combs, extractors, and even empty honey-packages.

6. Buying honey from strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.

7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.

8. Queen-bee—by buying queen bees from strangers and introducing her in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant States. To be safe, on arrival of queen, put her carefully alone in a new and clean cage with good food in it. Keep her in there, warm and comfortable, for a few hours before introducing. The shipping cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appeared in the hives, where the shipping cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to

attend a State bee-keepers' meeting in another State, and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked: "Do any of you think you got the disease by buying queen-bees?" Again several hands were raised. Even bee-keepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from abroad, I hope you will do with them as I have described above. Better be on the safe side.

Experiments.

1. A prominent Wisconsin bee-keeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey-extractor and comb-foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted; the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb-foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed, and there has been no sign of disease in his apiary since.

2. Foul-brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sunheat extractor, is not heated enough to kill foul-brood germs. Several cases of contagion where robber bees worked on solar extractor refuse or honey.

6. Comb-foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond a doubt, I took a quantity of

badly diseased brood-combs from several apiaries and rendered each batch of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood-foundation. I also took quite a quantity more of said wax, went to two wholesale comb-foundation manufacturers, and both parties willingly made my experimental wax into comb-foundation, just the same as they do every batch of wax. I then divided the various makes of foundation, and selected 20 of the best bee-yards in Wisconsin, where no disease has ever been known; had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

Symptoms of Foul Brood.

1. The infected colony is not liable to be as industrious. Hive entrance with few guard bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive-entrance, and often robber bees seeking entrance.

2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood are oval, smooth, and of a healthy color peculiar to honey-bee brood, but if diseased, the cappings are sunken, a little darker in color, and have ragged pin holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

4. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale gluepot. A colony may be quite badly affected and not emit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

5. Dried Scales.—If the disease has reached the advanced stages, all the above described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it, so it dries down on the lower side-wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom

of the cell. According to its stage of development, there will be either the shapeless mass of dark brown matter, on the lower side of the cell, often with a wrinkled skin covering, as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the side walls of the cell. Often there will be a small dried bunch at the front end of the cell, not larger than a part of a common pin head. To see it plainly, take the comb by the top bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the top of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen, and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees, and must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee dysentery. The latter have a somewhat similar appearance, but are more or less surface soiled, and will also be spotted or have streaked appearance by the dark brown sticky excrements from the adult bees.

Treatment.

"A bee-keeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case," Dr. Howard, in his valuable book on foul brood, states. "I regard the use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood, will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin, I have tried many methods of treatment, and cured some cases with each method; but the one that never fails, if carefully followed, and that commends itself, is the McEvoy treatment. Canada's foul brood inspector has cured foul brood by the wholesale—thousands of cases.

McEvoy Treatment.

"In the honey season, when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb-foundation starters, and let them build comb for four days. The bees will make the starters into comb during the four days, and store the diseased honey in them, which they took with them from the old comb. Then, in the evening of the fourth day, take out the new combs and give them comb-foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul-brood combs must be burned or carefully made into wax, after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done, or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening, it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey-flow. It will start the bees robbing and spread the disease, to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good sized colony to start the cure with, as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey, any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb-foundation starters on. Then, also, in the evening feed

the bees plenty of sugar syrup, and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening, remove the new combs made out of the starters, and give the bees full sheets of comb-foundation, and feed plenty of sugar syrup each evening, until every colony is in first class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned, or made into wax, and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug."

A. I. Root, of Medina, Ohio, says: "The starvation plan, in connection with burning the combs and frames and boiling the hives, has worked the best in treating foul brood. It never appeared after such treatment, though it did in some cases where the hives were honey-stained and not boiled, thus confirming the theory or fact of spores."

All the difference from the McEvoy treatment that I practice is this: I dig a deep pit on level ground near the diseased apiary, and after getting a fire in the pit, such diseased combs, frames, etc., as are to be burned are burned in this pit in the evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood-combs, or those having much honey in, as they are hard to burn. If diseased combs with honey in are burned on the surface of the soil, there is great danger; the honey, when heated a little, will run like water on the soil, and in the morning the robber bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

R. L. Taylor, Michigan University Experimental Apiary, reports: "The plan that the colony be shaken out into another hive after being allowed to build comb for four days, I have proven, in 100 cases, to be unnecessary."

In Wisconsin, I, too, have cured sev-

eral cases by the one transferring, when honey was not coming in very freely, but it is better, and a great saving of time to both bees and owner, to exchange, in three or four days, those foundation starters, for full sheets of foundation. Diseased brood-combs, and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling, to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey, that can be safely treated and saved. Many times it is poor economy to save all, and so many bee-keepers are not so situated as to keep all diseased material from robber bees while taking care of it; the best and only safe way is to burn the diseased combs and frames.

Utah.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment:

"Wherever found, it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend smothering the bees, and in order to do this without letting a bee escape, take a tablespoonful of sulphur and place it in the hive entrance of the hives; if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur, and it will soon kill the bees. This should be done early in the morning, before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed, so as to prevent any other bees from getting in. Then as soon as fruit blossoms come out so the bees can obtain honey, I treat them. I procure an empty box of any kind, so it is clean, then find the queen, put her in a screen wire cage, which is easily made. Take a small piece of screen, roll it up and tie a string around either end; cork up one end, then place the queen and a few workers, for company, in the cage, and place in the other end cork. Put same in this box, and shake all the bees out of their hive into this box. This must be done in the even-

ing, when no bees are flying. Keep the queen in this box for 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive, with good, healthy combs or foundation, and shake bees into it, letting the queen go, and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Wherever strictly followed, this has effected a cure."—C. Wilcox, Emery Co., Utah.

Pickled Brood.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries, to doubtful hopes, but those same colonies, after I gave them treatment, were in a month free from all disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen 60 colonies in one apiary badly reduced by it. As an experiment, one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them, and all were soon free from dead brood. At the same time I took ten of the worst brood-combs, where at least two-thirds of the brood were dead, and placed these combs in other strong, healthy colonies. They at once cleaned out the dead brood, and reared as nice brood as one could ask for.

Symptoms.

The larval bees (in last of May and through June) show light brown spots; a little later the cappings have small holes in—the cappings are not shrunk-en or dark colored, as in foul brood. The dead bee will be first swollen, with a black head, dried to a hard bunch, and often turned up—China-man-shoe-like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell; does not at any time stick to the walls of the comb; is easily pulled out of the cell; is never ropy or sticky, and, if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep the bees and

brood comfortable on cold days and nights.

Never put bees on old black brood-combs, or those with dead broods in; better make wax of the combs, and give the bees full sheets of brood-comb foundation.

Treatment.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered, so as to be warm on cold days and nights, there will be little or no pickled brood. If the queen is old, shows signs of weakness by putting several eggs in one brood-cell and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and, when queen-cells are started, remove them all and give them a queen and bees, between two of her own brood-combs from a hive where she has lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases, a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin, between dandelions and white clover bloom, when there is no honey coming in from flowers, and often cold days and nights, so that the live bees consume the liquid, unsealed honey first, and cluster in a compact body to keep warm; the result often is the larval bee, just changed from the egg to a tender little grub, is either starved, half-fed or chilled, so that it grows slowly, and too often it dies, and then it is we first notice this about the time white clover honey begins to come in. In other parts of the State, where pickled brood appeared it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey, or even sugar syrup, and kept the hive warm, all dead brood soon disappeared, while in the same apiaries, other colonies affected and not so treated, continued for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall, with a young laying queen, and an abundance of good honey, sealed or capped by the bees, if properly cared for during winter, whether in the cellar or in chaff hives, wintered out of

doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.

Black Brood.

Black brood is another fatal and contagious disease among bees, affecting the old bees as well as the brood. In 1898, 1899 and 1900, it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin, which was quickly disposed of. Dr. Howard made more than a thousand microscopic examinations, and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn black and die. At this stage there is a sour smell. No decomposition from putrefactive germs in pickled brood. In black brood, the dark and rotten mass in time breaks down and settles to lower side-walls of the cell; is of a watery, granulated, syrupy fluid, jelly-like; is not ropy or sticky, as in foul brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house fly will set a foot upon it.

Treatment.

Best time is during a honey-flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters, and giving full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

Dysentery.

Dysentery among bees in Wisconsin in the spring of the year is often quite serious. Many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky, and very disagreeable smelling, and is sometimes mistaken for foul brood.

Causes.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.

2. Poor winter stores, gathered in the fall from honey-dew, cider mills, sorghum mills, rotten fruit; also some kinds of fall flowers.

3. Old and especially moldy pollen or bee-bread.

4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means, such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation, so that all is dry and comfortable. If mold forms on the combs or cellar is so damp as to form mold, there is great danger the bees will have dysentery and die.

Treatment.

1. First of all, have an abundance of combs of sealed clover or basswood honey in brood-frames carefully saved, and see that each colony is wintered on such food. Three or four such combs will winter a fair colony safely, if confined on those combs late in the fall, and the hive contracted to fit the same. This is one of the most important conditions for success in wintering.

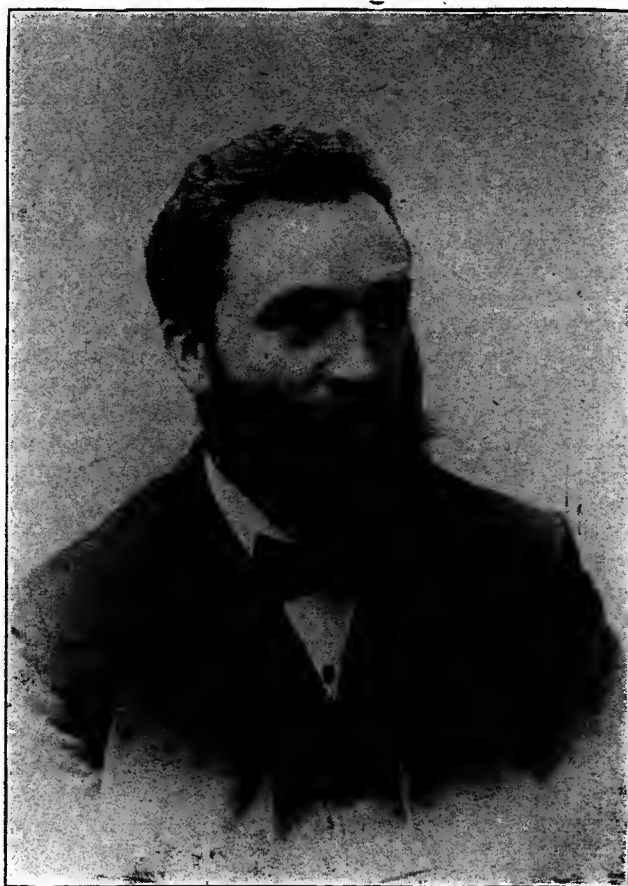
2. If in the fall the bees have gathered this unwholesome honey from the above named sources, it should all be extracted and either exchanged for those honey-combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.

3. Hives contracted and made comfortable, whether in cellar or outdoors.

4. If wintered in chaff hives outdoors, with feed as above directed, and there come one or two warm spells during winter, so that the bees can have a cleansing flight, they will not have dysentery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar, the bees will not need so much honey, and if the winters are generally long, with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery, so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a uniform temperature, about 42 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slaked lime on the bottom of the cellar may help, if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff-hive.



C. P. DADANT, President.

PROCEEDINGS
OF THE
NINETEENTH ANNUAL SESSION
OF THE
Illinois State Bee-Keepers' Association
NOVEMBER 18 AND 19, 1909,
AT THE STATE HOUSE

Morning Session, Nov. 18, 1909.

Meeting was called to order by the First Vice-President, A. L. Kildow, at 10 o'clock. Prayer was offered by Geo. W. York, of Chicago. Reading of minutes of last meeting was dispensed with.

The Secretary's report was read as follows:

SECRETARY'S REPORT.

Although the past season has been a record-breaker as to failure in the honey crop, our Association has gone the other way, for our membership this year was the largest on record.

The Association was organized in February, 1891, with only 15 charter members, as follows:

Black, S. N.....Clayton
 Coppin, AaronWenona
 Dadant, C. P.....Hamilton
 Dadant, Chas.Hamilton
 Draper, A. N.....Upper Alton
 England, P. J. (first President)..
Fancy Prairie
 England, A. J.....Fancy Prairie
 Hambaugh, Hon. J. M....Spring, Ill.
 Lyman, Hon. J. S.....Farmingdale
 Mills, Col. Chas. F.....Springfield
 Robbins, Geo. F.....Mechanicsburg
 Stone, Jas. A. (Bradfordton) now
 R. F. D. No. 4.....Springfield
 Wallace, Thos. S.....Clayton
 Yocom, C. E.....Sherman
 Yocom, J. W.....Williamsville

Of these 15 members, five are dead; and how many are present?

Answer: Three—A. Coppin, C. P. Dadant, and J. A. Stone.

The next year we had a membership of 108, mostly through the efforts of A. N. Draper, who got about half of them in Alton—just any one who would pay their fee—and, of course, that kind of a membership list would not last.

The next year we only had those interested in bee-keeping, and the list dropped to 56.

In 1894 we had 40 members.

In 1905 we had 172. Nearly one-half of these came through the Chicago Northwestern.

In 1906, we had a membership of 236—124 members direct; 91 through the Northwestern Association; 21, Western Illinois Association.

In 1907, 148 members—142 members direct; 6 through Northern Illinois and Southern Wisconsin; none from any other Association.

In 1908, 132 members—120 members direct; 6 through Western Illinois; 6 through Northern Illinois and Southern Wisconsin.

In 1909, 256 members—179 members direct; 59 through Northwestern; 18 through Northern Illinois and Wisconsin.

* * *

Since the National Association has permitted our Association, as well as others, to join in a body at 50 cents per member, we feel sure we will be able to get a still larger list of members as time goes on.

The different associations affiliating as at present, we are all helping one another, while we at the same time help ourselves, and thus are all ena-

bled to share equally in the State appropriations.

As we said in the beginning of our report, the past season has been the poorest on record for our State. There was no early crop, except honey dew, and it was as black as it ever gets. Our experience has been, on one occasion, that the honey dew at first was almost as light as heartsease, and after a dry, windy spell of weather the leaves that were covered with the honey dew were also covered with dust, and as black as the ground, and the honey gathered at the latter date was just as black, and seemed to have settlings in it.

The prospect for another year will surely be better, as there seems to be a good lot of white clover in the pastures.

We have observed during the year that, in the first place, the fruit bloom secreted but little honey to call the bees, and the result was a light crop of fruit.

The effort in nature is to reproduce itself in forming seed, and if the blossoms are not fertilized the result is no seed, and, therefore, no fruit.

We noticed, and were told by beekeepers here in town, that the white clover had no honey in it, and it produced no seed, because the bees were not called there to fertilize it.

The Linden trees bloomed as full as we ever saw them, and in nice weather, but the bees did not work on them, and in consequence they did not seed at all.

After harvest we made the prediction, along with our crop report that the Daily Journal requested of us, that if the red clover flowered in the same course as other blossoms had, there would be no honey, and, therefore, no seed, but they thought (I suppose) that I was trying to advertise something, and if they ever published it I did not see it.

It is the seed in the white clover that makes horses slobber from eating it, and we have noticed that when the bees had nothing to call them to the white clover—the absence of seed was proven by the fact that it did not make the horses slobber.

* * *

During the State Fair, parties asked us why the red clover had no seed (or so little) this year; so we found our

prediction had come true, and we told them it was because the clover, like other blooms, did not secrete any honey to call the bumble and honey bees to do their work of pollenizing the bloom.

Our last year's experience with the Legislature has brought us to the decision that if we do not use the same tactics that our opponent does, we had just as well leave the field. We found that a petition signed by less than a dozen went farther than a resolution, though it could have been unanimous, for the reason that three could report a resolution, but a petition weighed according to the number of signers to it. So let's have a petition with a thousand names, if need be. It is certain that "they who are for us are more than they who are against us."

We had five hundred (500) copies of our last report printed—three hundred of them in cloth for the members, and for the call we have from State Libraries and Universities. Our first annual report was all in paper covers, except for the offices.

When we have a call for all the back reports, they say, "Send them along." If they are not cloth bound, we will have it done.

When we received the last call for all our reports, we only found a very small number of several of the copies, and thought perhaps we would be compelled to send out to some of the members in those years to see if an odd copy might be had. So preserve your old reports.

We have on hand more of the second annual report than of any other. We had more of them printed because they contained a report of the World's Fair year at Chicago. If any one should want one of them, they could be had by paying the postage and wrapping, 10 cents.

We sent out one thousand letters to bee-keepers of the State, with blank applications for membership. This has proven the best way we have ever tried for securing members. We are assisted very materially in this by the free use of our friend York's Mailing List, for which he surely deserves a "vote of thanks."

The Premium List Committee did not suggest any change in the list, from what it was a year ago, but we are of the opinion that some slight change in the wording of some of the

premiums should be made, as they are construed differently by different judges.

The crowded condition of our exhibit at the last State Fair was almost unendurable, and we urge upon this Association that they petition the State Board of Agriculture for a new building to be erected, that will be large enough for the bee-keepers and horticulturists. The latter to occupy the center space and the former the space next to the outer walls.

The District Horticultural Society that had charge of the display at the last Fair, were crowded about in the same way as the apiculturists, and they are with us in this move for a new building.

This year is the first since the reduced railroad rates to 2 cents per mile, that they have offered the I. O. O. F. reduced rates. When our date was made for this meeting, we set it for Thursday, in order that the crowded condition of the hotels might be easing up at the beginning of our meeting, and when we sent out our notices we were not aware that the railroad rates would end on Tuesday—as the Odd Fellows' notices did not name the time.

In the nineteen years of the life of this Association, this year was the first in which death has taken our President from us, and, although none of our former Presidents are now living, our late President was the first one to be called while in office. His life and acts while with us will long be remembered, and are greatly deserving of fitting resolutions.

The seven States having the largest membership in the National, for 1909, rank as follows:

Illinois	399
Wisconsin	235
Michigan	189
Pennsylvania	189
New York	165
California	160
Minnesota	146

Illinois as many as Wisconsin and California combined.

JAS. A. STONE.

President Kildow—You have heard the Secretary's report. What will you do with it?

By motion of Mr. Dadant, the report was received and placed on file.

Mr. Dadant—The Secretary's report

shows the necessity of passing some resolutions. I move that a Committee on Resolutions be appointed by the chair.

Motion seconded and carried, and

the following committee was appointed: C. P. Dadant, J. W. Bowen and W. H. Hyde.

President Kildow—We will now have the Treasurer's report.

Treasurer's Report.

Treasurer's Account with Illinois State Bee-Keepers Ass'n.

	Dr.	Cr.
1908.		
Nov. 19. To Bal. on hand and for membership fees from Sec'y...	\$ 129.94	
Dec. 26. To check from Herman F. Moore (for 54 fees).....	13.50	
1909.		
Jan. 27. To check from Herman F. Moore (for 5 fees).....	1.25	
1908.		
Nov. 21. By salary to Secretary for 1908.....		\$ 60.00
Nov. 21. By salary to Treasurer for 1908.....		15.00
1909.		
Nov. 17. By balance		69.69
		<hr/>
		\$ 144.69
1909.		
Nov. 17. To balance on hand.....	\$ 69.69	

Chas. Becker, Treasurer, Account with State Fund.

	Dr.	Cr.
1908.		
Nov. 18. To balance	\$1,351.44	
Nov. 20. By Dr. C. C. Miller, R. R. fare as delegate.....		\$ 8.25
Nov. 20. By R. A. Holekamp, R. R. fare as delegate.....		4.20
Nov. 20. By Geo. W. York, R. R. fare as delegate.....		6.55
Nov. 20. By H. W. Lee, R. R. fare as delegate.....		8.20
Nov. 20. By Mrs. Snider (Reader)		5.00
Nov. 20. By C. Becker, postage and notary public.....		.88
Nov. 20. By W. B. Moore, R. R. fare as delegate.....		5.00
Dec. 4. By J. Q. Smith, delegate to N. W.....		11.80
Dec. 15. By Miss Behrend, Stenographer.....		40.00
Dec. 24. By Geo. W. York, printing blanks and stamps.....		34.20
1909.		
Feb. 10. By Geo. W. York, for copy of N. W. report.....		84.80
June 9. By Illinois State Register, to printing report.....		231.00
July 9. By J. Q. Smith, for inspection (7) and expense.....		37.40
July 9. By J. Q. Smith, for inspection and expense.....		62.60
July. To State Treasurer	1,000.00	
Aug. 3. By J. Q. Smith, inspection.....		103.00
Sept. 1. By J. Q. Smith, inspection.....		105.00
Sept. 1. By W. B. Moore, inspection.....		26.92
Sept. 7. By Chas. Becker, inspection.....		63.85
Oct. 14. By Chas. Becker, inspection		23.65
Oct. 20. By A. L. Kildow and I. E. Pyles, inspection.....		81.20
Oct. 22. By Louis Werner, to exhibit foul brood (cost of bees)..<		7.25
Nov. 1. By Louis Werner, inspection		32.00
Nov. 17. By balance		1,368.69
		<hr/>
		\$2,351.44
1909.		
Nov. 17. To balance on hand	\$1,368.69	

The report was read by Mr. Becker.

Mr. Moore—I move that the Treasurer's report be accepted and placed on record.

Mr. Stone—I am not ready to vote for that; I move that an Auditing Committee be appointed. There is a difference in our accounts; they do not coincide, but I expect he has made his all together, the State fund and Association fund, and I have made accounts for Secretary, and Treasurer. I could not put them together, and when the Auditing Committee looks over it they will be able to explain it.

Mr. Moore—I will withdraw my motion.

Mr. Bowen—Before appointing an Auditing Committee wait until all the reports are in.

A financial report was then read by Mr. Stone.

Mr. Bowen—I move that this report be referred with the Treasurer's report to the Auditing Committee, consisting of three, Mr. Moore and two others, appointed by the Chairman, and that all financial reports may be referred to the Auditing Committee.

Motion carried, and an Auditing Committee appointed as follows: Mr. Moore, Mr. Pyles and Mr. Werner.

President Kildow—Report of committees.

Mr. Pyles—There was a Legislative Committee appointed last year, and I think it ought to make a report.

Mr. Stone—It is a verbal one.

Foul Brood Legislation.

The President asked me (the late Mr. Smith was chairman of the committee, considered such by virtue of his office,) if I would act as chairman because he was going to Texas, and he left it that way; and Mr. Becker and I were the only two of the committee that went before the Legislature; we got the Bills drafted, by typewriter, and our Senator advised us to put them only in the hands of a member of the Senate, and let them pass through the Senate; that they would go before the House with more force than if they were offered in both houses at the same time. We had done that the term before, and it went through the House and was defeated there, and it seemed to get them into a kind of fighting position; when the Bill came from the Senate, they were ready to defeat it, and in that way we did not get anything done; we acted upon the advice of Senator Hay, who had offered our Bill in the Senate. The Bills, both of them, went through the Senate all right; the Appropriation Bill went through the House all right. When it came to the Foul Brood Bill we were notified by a good many of the members of the Appropriation Committee that that was not the committee it ought to have gone before; we don't know why. They said that letters had been sent to them, showing them that there were some bee-keepers that opposed that Bill. They asked us why we were not unanimous, and we told them the best we could about the fight that occurred two years ago with those men in the northern part of the State, who had always been opposed to it, and that they had attacked the committee who had asked for this Bill on the ground that they were manufacturers and sellers of apiarian implements, and that they were doing this for the sake of destroying the bee-hives that they might be enabled to furnish more bee-hives. At that time we went before the Senate Committee, Agricultural Committee, and this whole thing came up in opposition to it at that meeting, and after we had been heard by the Committee the chairman (who was Senator Dunlap) said that he had a letter in his possession that he wanted to read before any action was taken on that Bill, and he proposed that they defer action until a week from that day. When Mr. Dadant

and I guessed and told the Senator who the party was who wrote the letter, he thought perhaps we knew something about it, he listened to what we said. We wrote letters, then, to Mr. York and to Dr. Miller, and others, and that committee was just flooded with letters, so that when next week came round, we went there ready for them and I asked the Chairman if that Bill would be considered or acted upon, and he said: "No, but you may rest easy; that letter will never be read and we will report the Bill out all right." In that letter he attacked the committee as being manufacturers and sellers of apiarian implements (although Mr. Dadant was a member of the committee—he was not one of the Executive Committee). They had got wind of it that Mr. Dadant was on the committee, I suppose, and they accused the whole committee of being interested in the manufacture and sale of bee-hives. A petition, this last time, came before the Appropriation Committee in the House; in that letter they had even stated names—C. P. Dadant, and also mentioned A. I. Root and other parties that were interested in the manufacture and sale of bee-hives—as being the chief promoters of that Bill, and it did not make a bit of difference what we said to that committee, we could not get that out of their heads. They read the signers' names off—we demanded it—and we got it because we guessed the writer of that letter; they had all signed the petition that the law be not allowed. That is why I recommended what I did in my report. The only thing that the bee-keepers now can do for the meeting next year, is to get up a proper petition, and to get all the signers they can to it, to see whether we can outnumber them or not. I believe that is the only way we will ever get that Bill through. I do not think of anything more, and if any wants to know any more than I have told, they will have to ask questions.

Mr. Becker—Mr. Chairman, you will remember a year ago I spoke of how hard it would be to get anything from the present Legislature, as there were so many factors in both parties. Your committee met the Legislature; we put our Bill in the hands of Senator Hay, of this District, and he did good work for us. It went through the Senate, but the session was prolonged, and there was nothing done by the

Committee on Appropriations, until nearly the close of the Legislature, and they all were anxious and wanted to get home. I came up here several times and saw Mr. Hay about it, and he said: "We will let you know whenever it passes," and finally it passed, and Mr. Stone and I came up here and we went before the Committee on Appropriations. Both Bills—the Appropriation Bill and the Foul Brood Bill—were given to this Committee on Appropriations, when it should have been given to the Committee on Legislation, and the Chairman of that committee, as anybody could see, was opposed to it. He came right out, the first time we came up here, and just told us: "We will pass your Bill on Appropriation all right—you can go home; and the other you won't get." But when we went up again, he finally gave us a few minutes, and we had not talked more than five minutes, until he called us down and he did not even give us the courtesy enough to vote on the Bill.

We had a great many friends in that committee, we had at least eight or ten friends for the Foul Brood Bill there, but you know, in a legislative body, if the chairman is against you, you might just as well stick your papers in the pigeon-hole, then and there; that is the end of it. We wanted to go home, and I told Mr. Stone "they are not going to bring up that Bill at all." Mr. Stone said, "I will see that they will." He went to some party, and he finally brought it up, and they took a vote on it. He told us in the first place the Appropriation Bill would be passed. A petition was drawn up by some parties opposed to the Foul Brood Bill. He did not want it to pass. There is this much about it—we went away from that committee, at least I did, disgusted. I did not care to go back there any more, and I said then that until the bee-keepers wanted the Foul Brood Bill, that there was no use in agitating the question any more.

We surely want a Foul Brood Law. There is more foul brood in the State of Illinois now than there has been in years, and probably, by next year, there will be a great deal more. There will always be some men opposed to it, always. There is no measure that you can bring up but what has its enemies, who will be opposed to it. I think we will just have to keep continually agitating this question and

bring it up from time to time, and probably we can learn something, by the experience we have passed through, and we will finally succeed in having a Bill passed. We must have it, after all the work that is being done, and that we have done, in trying to stamp out Foul Brood. So far it has not amounted to anything. It helps a few individuals, but their neighbors let things go, and they have it right back again. They tell you, "what is the use of me cleaning up? This man, and that man's bees have it, and mine will have it again, anyhow; I might just as well let them go."

I think next time we would better not bring this matter before the Committee on Appropriations, but before some other committee. We will probably have better success next time, if we work hard and in earnest before hand; the old saying is: "If you don't at first succeed, try, try again," and may be, if we do this, we will finally succeed.

Mr. York—I don't know whether this is the place to discuss Foul Brood legislation—perhaps not—but I think it might be well for us to know the names of those who signed that petition. We might be able to tell the next Legislative Committee who they are. I imagine there are some on that petition who do not have more than one or two colonies of bees, and if we just know who they are, we will be able to tell the committee next time—and we can get one hundred names of large bee-keepers who are interested in the business; let the legislature know who they are—who are opposed to it, and who not.

Mr. Stone—I could name two or three—the ones that I remember, but I would hate to do it, because those men have a little ground for feeling hard, and I will tell you why. I never told it before at a Bee-Keepers' convention; I think I told Mr. Smith, and perhaps Mr. York.

In the outset of our foul brood business, the foul brood inspector appointed—on one occasion sent an assistant inspector, and this inspector came to the house of a certain man (who told me of this incident) from an apiary where he had been handling foul brood. He said it was about 11 a. m., and he was very certain that that inspector had not washed his hands, coming direct to him from where he had been handling foul brood. He was de-

terminated that the inspector should wash his hands, that he should not go into his apiary until he had done so. He told the inspector to wait just a minute, he would go to the house and see if dinner was not ready, and that they would eat dinner before they went into the apiary. He thought then he would be compelled to wash his hands, and he succeeded in doing that; but, he said, "Suppose I had not succeeded in getting him to wash his hands, he would have gone into my apiary, and if I did not have any foul brood, he would have given it to my bees."

The first time I ever saw foul brood, I was afraid to touch it, for fear I would take some part of it home to my bees. Other bee-keepers are just as scared of it, or at least some are, and I can't help but sympathize with the man who sees those possibilities.

Now, we can't be too careful with our inspectors—to see that they have disinfected their hands and clothing before they go into another apiary, after they have been in one that is infected with foul brood.

Now, these men have got these things to consider, and when they don't know who the inspector is who is going to be sent, it makes them somewhat fearful.

Mr. Dadant—I wish to call the meeting's attention to the fact that there is no excuse for people wanting to destroy hives so as to sell them more. I know there is not a soul in this room who would accuse me of wanting to do such a thing.

Mr. Stone—I want to say this, Mr. Dadant; if a man is guilty, if he is serving the devil, he always finds excuses for even that.

Mr. Bowen—I would be opposed to have it go on our reports, any one name mentioned in connection with this matter. I have seen other cases, where parties have opposed things, before now, and when they got hold of the thing in the right light they were most enthusiastically in favor of it. When these parties get hold of the question rightly, they will probably be as much in favor of a foul brood law—foul brood legislation, that will govern this thing, as any one of us. I am opposed to naming names; let's do what we do in a kind spirit.

President Kildow—There is a good deal in what Mr. Bowen says. We don't want to stir up any more strife

than we can help. Our reports give us the names of two, so we can't help that; we can't help but know them.

Mr. York—I don't want to prolong this discussion, but I think that is a queer stand to take; when these parties name Mr. Dadant and Mr. Root—those names have already been published.

President Kildow—It seemed as though they dared to do more than we.

Mr. York—They have named these men, who are not guilty at all, and we know some who are opposing this legislation.

Mr. Bowen—I don't want to fight in that kind of way. Those men, probably, when they find they are in the wrong, will apologize. I would not mention the names, or go so far as honoring them with consideration in that respect.

Mr. Pyle—I move that the report of this Legislative Committee be adopted.

The motion was seconded and carried.

President Kildow—Any unfinished business? Anything any one wants to bring up?

Mr. Stone—I suggest that right here we listen to Mrs. Snyder, whom we have on our program.

Mrs. Snyder gave a recitation entitled, "Bee Sting Cure for Rheumatism," by Bob Burdette.

Mr. Foster—I am interested in foul brood legislation, and want to do what I can towards furthering that cause. I wish to become a member of this Association. If you will cite me to the proper parties, I have the dollar.

President Kildow—Would it not be well for any one who wants to join, to come forward—any one who would like to pay the dollar? The Secretary will take it at any time.

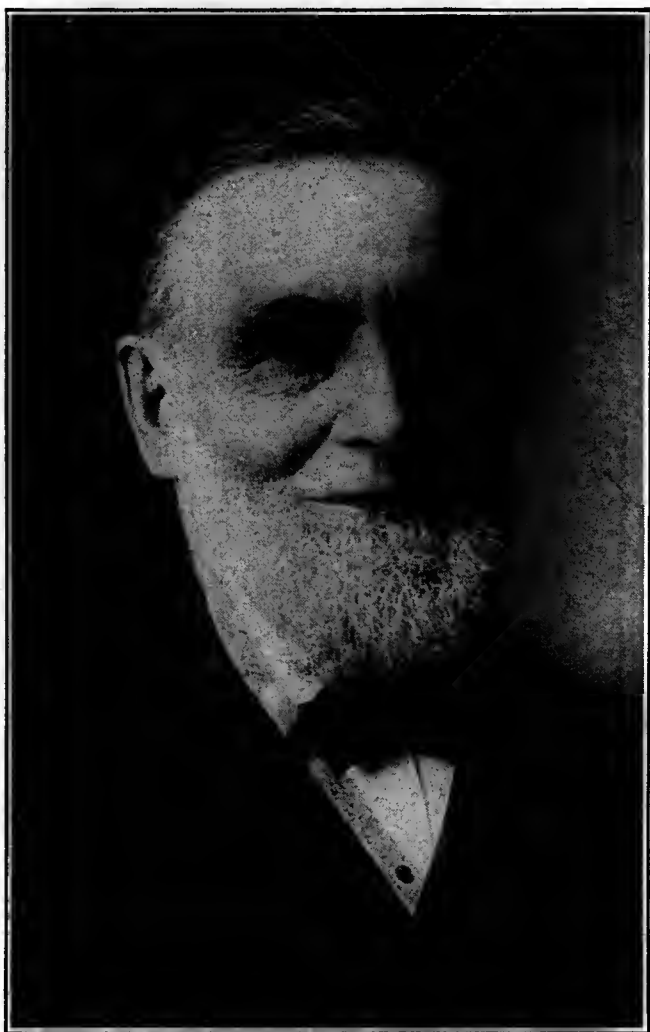
A member moved that we adjourn until 1 o'clock p. m., which, on seconding, was carried.

FIRST DAY—Afternoon Session.

The meeting convened at 1:30 p. m., with President Kildow in the chair.

President Kildow—Any unfinished business?

Mr. Stone—I suggest that, as we have a whole lot of matter to come before the convention, and a good deal of it is embodied in the question of foul brood, that we hear from Mr.



DR. C. C. MILLER.

York. Mr. York has a paper, by Dr. Miller, on the subject of foul brood, and then right in that line will follow Dr. Bohrer, and others who have anything to say along this line. It might be well to discuss the election of foul brood inspector, and then the question of election of officers, in connection with the election of a foul brood inspector.

President Kildow—If there is no objection, we will listen to Mr. York.

Mr. York then read the following paper:

Dr. Miller's Experience With European Foul Brood.

In 1907 some cells of dead brood were found in No. 13. We thought it might be that they were poisoned, as an orchard in easy reach had been sprayed while the trees were in bloom.

If we had known at the time that we could send samples to Dr. Phillips, at Washington, for identification, it would have saved no little subsequent trouble. But No. 13 apparently recovered, and was one of the very best in the whole apiary. In 1908, I think the same trouble appeared in two colonies, and little heed was given to it, the supposition still being that the spraying accounted for the trouble. The year was a boomer for the bees, and if there was any dead brood later in the season it was unnoticed.

In the spring, or early summer, of 1909 we noticed more or less dead brood in a number of colonies, but not until after we had done our level best to spread it throughout the whole apiary by exchanging frames. A sample was sent to Washington. The reply came that we were entertaining

foul brood—not American, but European—the kind that had been pronounced ten times worse than American!

Just for a little I had a feeling like giving up in despair. But not for long. Others had fought the disease; why not I, even if it was spread all through the apiary? One thing to be thankful for was that I had given up the out-apiary, and had nothing but the home apiary to care for. Things are never so bad but they might be worse.

In all, there were about 150 hives in the apiary with bees in, although a good many hives contained nuclei, most of which were shortly broken up. Looking over the record book now, I find only 22 colonies that were at all times entirely clear of the disease throughout the entire season, against 93 that were more or less affected. How many of the nuclei were affected I do not know, but breaking them up certainly lessened the number of affected families to deal with. Besides, the season being one of dearth, there was always danger that robbing might be started at any one of the nuclei, and a diseased nucleus might thus give the disease to several clean colonies.

The failure of the crop made matters look more discouraging, although I may remark in passing that the late flow filled up the hives in good shape for winter, and gave about a thousand sections besides. The most discouraging feature of the whole case was the fact that all around were those who had one or more colonies here and there, whose bees were diseased, and however often I might clean up, these sources of infection would always be ready to give me a fresh start, until they were all wiped out; since there is no law in Illinois to prevent any one from indulging in all the foul brood he likes.

In some colonies, only a bad cell or two were to be seen; and right here is as good a place as any to say just what was to be seen. Generally the diseased brood was seen when nearly full grown and still unsealed. A healthy larva is pearl-white; the diseased brood is cream-color, or darker. That's the only thing we paid any attention to, and it is not difficult to detect, even if there be only a single diseased larva in the hive. Generally very little ropiness could be detected, and the odor in this

European or black brood is very little, compared with that of American foul brood. There was no appearance of anything wrong with the sealed brood, as is the case in American foul brood. Perhaps there is little or no diseased brood in the sealed cells of European foul brood, the brood all dying before it is sealed, and being cleaned out by the bees. And right here, I think, is a marked difference between the two diseases. In American foul brood the putrid mass dries down in the cell so solid that the bees cannot remove it: while in the European variety it is not so much like dried glue, and the bees can clean it out of the cell, as was shown by the blackened remains thrown out at the hive entrance in at least some cases.

The amount of bad brood in a hive ran all the way from a single cell up to perhaps one in every 8 or 10 cells of unsealed brood. This, however, may not be entirely correct, as it is only a matter of memory. As we wanted to give attention first to the worst cases, we marked as "bad" any colony that had one or more bad cells, up to those that had, perhaps, one bad cell in every 20 cells of unsealed brood, and anything worse than this was classed as "very bad." I know it may sound a little strange to some to class as "very bad" a colony having among its unsealed brood only 5 to 12 per cent diseased, for that would class as very bad a colony having only about $1\frac{1}{2}$ per cent of its whole brood diseased; when they have seen foul brood so bad that nearly all the brood in a comb, both sealed and unsealed, would be rotten. I am only telling how it was here. How long the disease would have to run before it would get to be so very bad, I do not know.

July 8th we began throwing on foundation after the orthodox plan, beginning with some of the "very bad" cases. In the first case, we shook the bees on newspaper in front of the hive, so that if any affected honey was shaken out the newspaper could be burned. But after this first case we brushed the bees off. It was, perhaps, safer, and, on the whole, less trouble. Dr. Phillips having said that he thought the second shake was not necessary, the bees were thrown upon full sheets of foundation, and I may say here, in passing, that in no case where

they were thus thrown upon foundation did the disease appear again. Neither did the disease reappear from infected hives, for nothing whatever was done to disinfect the hives. Whether any harm may come in future, remains to be seen, but as no harm was found up to the close of the season, it seems probable that none will be. The frames were boiled in lye and used again.

It was not long before we discovered that colonies that had been treated were deserting their hives. In all, there were 9 hives that were thus left utterly empty. We concluded that, as no honey was coming in, they were starved out. So, after that, we began giving honey to each colony when it was brushed. If a super with a little honey had been on the hive, it was left, with an excluder under it. Otherwise a section or two was put into the body of the hive. Although these sections were generally from diseased colonies, in no case was it discovered that any infection came from them.

Giving the bees a lunch at the time of brushing them was generally effective in preventing desertion, but not always. We finally settled on the plan of leaving in the hive one of their combs. This was put in one side of the hive, and next to it given two empty frames. Not empty combs, but empty frames—not the least bit of a starter in them. Generally the bees made no use of more than one of these, and within three or four days we found at least a little comb built on the frame next to the comb. Then we took away the comb, leaving the frame they had started on, and filling up the hive with full sheets of foundation. Sometimes we took away the frames they had started on as soon as a good beginning was made on the foundation, and sometimes we didn't. In either case, the cure was all right, only there was danger of the frame being filled out with some drone-comb.

The brood that was taken from four colonies was piled up on a 5th over an excluder. In three weeks the brood would be hatched out, and the combs in the four upper stories would be ready to be melted up. But there would still be the lower story full of affected combs, which would have to be dealt with. Then I thought we might take advantage of the Alexander

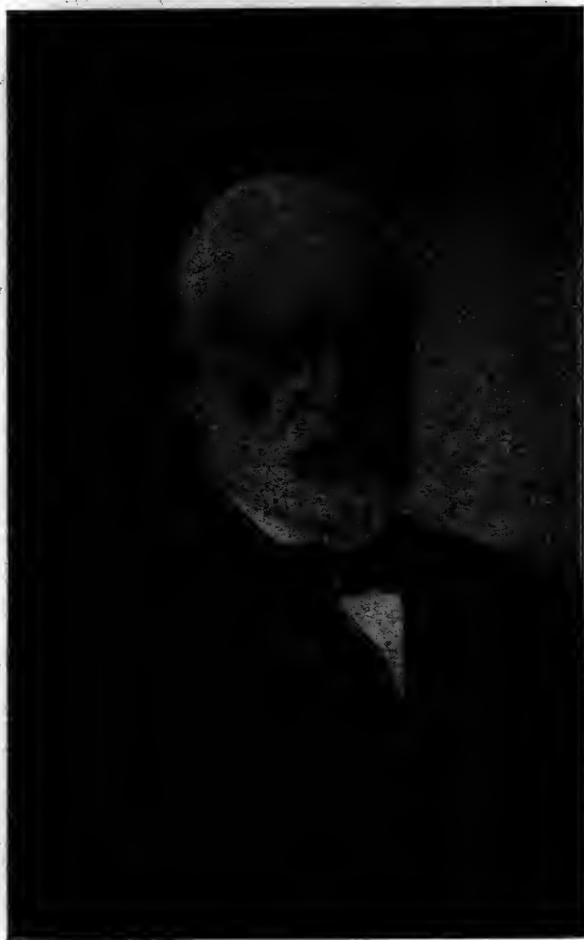
plan, if there was anything in it. The plan of the late E. W. Alexander, in treating European foul brood, was to make a colony strong, make it queenless for three weeks, and then give it a young Italian queen, the bees, while queenless, having cleaned out all disease from the cells. So I took the brood from the diseased colonies and enough bees to care for the brood, and made a pile four or five stories high, leaving the pile queenless. In ten days all queen-cells that were started in the pile were killed, and, either then or within two or three days, a very young virgin queen of choice stock was given.

The combs of some of these piles, after being thus treated, seemed to be cleaned out all right, and no disease showed in the brood that was in them afterward. Other piles were a failure. I am inclined to think that the success was where the piles were very strong in bees, and the failures where there were not so many bees.

As before said, we commenced first on the "very bad" cases, leaving till the last the mildest cases, and by the time we got around to take care of these last, no bad brood was to be found in them, the bees having apparently cleaned out the disease of their own accord. Of course, these were left without any treatment. There were 23 of these colonies, which had at least a few cells of bad brood, and were cleaned up by the bees themselves.

The regular thing is to shake on foundation or starters in the evening—that, probably, because safer from starting robbing. With so much to do, it would have been inconvenient for us to do all the work in the evening. We did it any time in the day, when the bees were at work, and, although a dearth was on, yet there was at least a little the bees could do for a good part of the day, even if they did not get enough for their own use. We kept a very sharp look-out for robbers, and whenever there was any sign of them we suspended operations.

From the experience I have had so far with European foul brood, and from what I know about American foul brood by no small amount of reading, I have doubts as to European being very much worse than American, if, indeed, it is as bad. But it may be



DR. G. BOHRER.

that for some reason the European was not so bad here as elsewhere.

The Alexander treatment was, in some cases, successful, and in some cases a failure. In all cases where colonies were thrown on foundation, although we did some things that were not according to rule, there was never a single diseased cell to be found in any one of them afterward. Yet, if it were to do over again, I should make more use of the Alexander plan, and throw fewer colonies on foundation. A colony thrown on foundation was so much more reduced in strength than one left with its combs, that one could afford to treat again the cases of failure with the Alexander plan. Moreover, it is possible that there would be a few cases of failure with the Alexander plan if all colonies treated were first made strong enough.

It is just possible that what succeeded in a year of crop failure might not be just the same in a bumper year.

And what succeeds with European foul brood may not turn out the same with American. I have some doubts whether the Alexander treatment will succeed at all with American foul brood.

C. C. MILLER.

President Kildow—Does anybody wish to discuss this question, or ask any question on it, or anything of the kind? If not, we will listen to an address by Dr. Bohrer, of Kansas.

Dr. Bohrer's Address On Foul Brood.

Mr, President, Ladies and Gentlemen of the Convention:—I have had some knowledge of foul brood ever since in the '70's. I have noted with some care the different methods of treatment, and the progress that the disease has made throughout the length and breadth of the land. I regard it as being the most important question now confronting American bee-keepers—the control of and stamping out of foul brood. The position has been taken by a few

—but a very few, I think, that know anything at all worthy of mention concerning the disease of bees and their management—that foul brood is not curable. I am satisfied that it is a mistake. You, here in the State of Illinois, your legislation is not perfect—it is very much at fault, like our own in Kansas. We have a law there, but not by any means a perfect one. We have been trying for a number of years to get a bill that will cover the ground, and I believe we are a little better fixed than you are. The law is not operative in some counties, while it is effectual in others. It requires a commissioner to be appointed in any county, upon the petition of twenty-five bee-keepers. We have a good many counties that have not twenty-five bee-keepers in it, and the law is not operative there; they can't get a commissioner. Last winter I tried to get the law changed, so as to give the nearest county inspector the right to inspect in counties where they only had, say, ten bee-keepers; not as many as twenty-five. It passed the House, but persons who are familiar with a good deal of this legerdemain that is practiced in this matter of legislation, know that some times Bills are lost through very trifling occurrences. The Bill passed the House and went to the Senate, and would have passed there, but Senators and members of the House all have their pet measures. For instance: I would say to Mr. York, "I am a bee-keeper. I have a Foul Brood Bill I am interested in. I want it to go through." But, for some cause, I can't see my way clear to support his measures, and for that reason he gets my Bill killed. That is the way our Bill was killed. I have heard a gentleman named today (I understand he is an honest man) of Chicago, who takes the stand that foul brood is not curable. In order to prove to him that it is, we have got to demonstrate the matter in some way or other.

What does foul brood consist of? Primarily it seems to be a germ, and I have no right to question this. Both Dr. White and Dr. Phillips have testified to that fact so emphatically as to make it almost beyond question—that it is a germ disease, and, if we can destroy that germ, that must be an end of it.

Now, as to the remote or primary cause of what ushers that germ into existence, we know nothing. Dr. White and Dr. Phillips have said that publicly, before our conventions, and I am satisfied it is a fact; but it is the primary, exciting cause we have to deal with, and for that purpose we want legislation to keep it out of our apiaries.

We have three different methods of treatment. The first that ever I heard was by Mr. Rood, of Michigan, in Indianapolis, in 1871. Foul brood got into his apiary, and the bee-keepers wanted to know his experience, how to diagnose the disease. He gave it so clearly that the first case I saw, two or three years ago, I knew the very moment I got scent of it. If you ever once get scent of it, you will never forget it. And the method of treatment that he recommended was something like this:

He said he had tried a good many different plans; he gave one he regarded as effectual. He says: "I would advise that you dig a hole in the ground; put hay or straw in it; sprinkle coal oil all over the hay or straw, and in the dead of the night, close up the hive and set it carefully over that straw; then put more straw on top of it, and more coal oil on, and set fire to it."

I understand that one large Illinois bee-keeper took the position that certain men who were furnishing bee-supplies throughout the country wanted to get a foul brood law passed, in order to get bee-keepers to destroy their property, that they might sell them more. They may get some legislators to believe that, and no doubt have, but when you come to analyze it, and look into the depths of it, there is nothing to it. The like has never been known, and it becomes the duty of your Legislative Committee, and every bee-keeper in the State, to say to his Senator that such a thing never was known, not since we got out of the stage that Mr. Rood, of Michigan, spoke of; they don't do that; that is folly. He made that up out of whole cloth; he manufactured such a story as that.

We, then, will take it for granted that that is not true, and you want to show that up before your Legislative Assembly; and if I lived here in the

State of Illinois, I would try to form the acquaintance of your Governor, and have a talk with him. Say to him that, while there is an appropriation for the purpose of exterminating foul brood in the State of Illinois, we want to make the law more effective, and clothe your bee-inspector with power to enter on the premises of any man in the State of Illinois, and inspect same at any time he may see proper; and if the disease is found, to adopt such a method of treatment as his judgment may prescribe; and if you can get your Governor now to say something about that in his message, it will go a long ways toward influencing your Representatives and Senators to enact a proper law.

I have had two terms in our Kansas Legislature, and know that when you can get a Legislature to understand that what you ask for is necessary, you are very apt to get it; they will interest themselves in it when they are satisfied it is not going to do anybody any harm, and that it is something that is necessary for the good of the public. Another thing, they are very much afraid of grafters. Now, I will give the language that was used by one of our Senators. He said: "Who ever heard of such a thing as passing a law to go around picking dead bees out of bee-combs?"

Governor Folk, of Missouri, was as bad as any; he vetoed a very good Bill. I scored him right to his face for it. I said to him: "You have thrown a stumbling block right in the face and eyes of an industry that is worthy your consideration (for this reason, if for no other), that you know nothing about it. If you knew anything about it, you never would have vetoed that Bill."

These Governors are our hired men, and we must come to them and tell them what we want, and the need of it, so that they will have knowledge of it and understand it.

The next time the Legislature met, and a Bill came to him, Gov. Folk approved it.

I understand your Governor here is in sympathy with the bee-keepers of the State. Send a committee to him, and have him, if possible, say something in his message. Then every one of you write to your Representatives and Senators; go to them; see them in person; they are your servants; they

will do what you tell them to do, if they are given a good and sufficient reason for it. Give them a good and sufficient reason for wanting a law of that kind. There is a way to get at these men who are opposing foul brood legislation; I believe that they can be approached in the right way; don't get mad, and stay mad very long; that doesn't do any good.

I stirred up a Pension Commissioner at Washington when he said I was getting all the pension I deserved. I asked for an increase in my pension; he wrote me inside of three weeks from the time of my examination that I was getting all I was entitled to under the law. Said I, "General Black, that is not a fact. There are men on the pension roll getting all the way from \$1 to \$100, and you are one of the \$100 men. The law says you are a wreck, yet you can run the U. S. Pension Office, and yet you say \$8 is enough for me, and you say I am getting all I am entitled to. I will not stand for it; I demand an appeal to the Secretary of the Interior, or a rehearing." And I got it; I had a re-examination, and my pension was raised to \$24. That is what can be accomplished if you go after a thing in earnest.

You want to get the facts about foul brood before your representatives; it is the duty of every one of you to consider yourself a committee of one to see your representative and tell him what you want, and that you Must Have It.

Show him the amount of capital invested in bee-keeping in the State of Illinois, and the number of bee-keepers there are in the State of Illinois; you are away ahead of any other State in the Union; New York and California are behind you. You have got intelligence enough, if you will wake yourselves up; stir these fellows up all over the State; tell them to go and see their Senators and their Representatives, and tell them what amount of money there is invested in bee-keeping, and what it will amount to in a few years; and then what, if foul brood is allowed to run rampant, uncontrolled, what it must mean to the bee-keepers; and that if we have such a protective measure passed as we are seeking, giving our inspector power to go on the premises of men and inspect his bees, that it will mean

everything to the bee-keepers of the country in helping them carry on their industry.

I went for a man in Kansas, who was selling a few bee-supplies, who got foul brood in his apiary. He said to me: "You are injuring me and my business very greatly; if you don't stop it, and retract what you have said, I intend to prosecute you." I said to him: "I wish you would, and if you don't do it I will prosecute you, and I am going to send the bee inspector on your premises, and if you don't get rid of that foul brood we are going to destroy every bee you have got." He came down off his perch in a minute.

You want to have your bee inspectors clothed with authority to enter upon a man's premises like a gentleman; don't try to insult him; show him what the law is, and that the inspector has come for his protection.

We were having an election for road overseer in Kansas, and I made the remark that if I was appointed road overseer I would plow up the streets of this town; I would have them graded at any cost. The next morning I found I was appointed road overseer. Inside of two hours I ordered the wood-piles off the streets, and things cleaned up. Many of them said they would not do it, and would like to see me undertake to make them do it. But I said: "Your wood-pile has got to go; don't forget that." And it was not many hours before every wood-pile was off of the street. They talked about licking me if I would make them do it. Then I discovered a gravel bank, and I got every man in the road district, and gravel was put over the principal streets a foot deep. It was a hard matter to keep them from electing me after that, every year, for road overseer.

That is the way these things are. You may go to some man's house, and he will say: "When I want my bees inspected I will send for you." Read the law to such a man. He will probably say: "Blast your law; I don't care for such a law." But you can say to him, as I said to the men who had wood-piles in the street: "That wood-pile has got to go; it will cost you \$5.00 for every day that you let that wood-pile stay there." Whenever you get your law in that shape, and clothe

your officer with proper authority, you will find people will submit to it, as with other laws.

I believe the road is plain, ladies and gentlemen, if you will adopt that plan. It may cost you a little money to keep two or three men about the Legislature here, and have them go and see able men in both the House and Senate, to get them to support your measure; if you don't, you may suffer a loss. If you adopt that plan, I believe you will meet with success.

The bee-keepers are going from Illinois to Kansas, and building up an industry, and foul brood is coming into the State rapidly. I fought foul brood in my apiary last year, last summer; my apiary was cut down to 34 colonies. (I don't keep bees for money, but for a pastime, and what I may be able to teach other people, and what I may be able to learn.) I don't know all about bee-keeping and all about foul brood, but I do know some things that some other people have not learned. I believe it is our duty to exchange ideas and opinions, and to get valuable ideas from each other.

Now, in the matter of treatment: One of the most powerful colonies I had, or ever did have, was in the Jumbo ten-frame hive. The bees had filled one super about full, and were capping it. After I raised it up, and put another one under, they quit work. I opened it immediately to inspect it, and I discovered foul brood. There is an odor about it; if you once get the scent of it you will never forget it; that is, American foul brood. I went to work to treat it immediately. There was the honey-flow going on! I didn't want to take it away from the apiary; that would have been the most satisfactory method, if it could be adopted, but I could not do it at that time. There was a colony within about five or six feet on each side of it. I began to take these bees and put them on comb-foundation; I took all that honey and comb away from them.

I set the new hive on the old stand, lifted the combs out one by one, and brushed the bees off. I did not shake them; I would not risk that, because more or less honey would fly out and be scattered and the disease be spread; I didn't want to do that; that was, with me, an original idea. In

order to keep the young bees from going to the hives on either side, I spread a sheet right down in front and brushed them down on that, and I thought almost every bee went in, but in about three or four weeks—maybe not to exceed two—I looked into both hives, right and left, and found foul brood in the one to the left. I was crestfallen—to have foul brood creep into a colony where it had not been before! And what had caused it? A bee or two went into that hive and carried some honey with them. If I had my way about treating foul brood, I would close up the hive, and at the dead of night take them, say, two miles from the apiary, away from the possibility of its being spread by that means. Where you are situated so you can do that, I believe that would be the safest plan. The foul brood I had to deal with, I sent a specimen to Mr. France, and he pronounced it American foul brood. To confirm what he said, I sent a sample to Dr. Phillips, and he said it was American foul brood. I knew that it was foul brood, and I must adopt some means of getting rid of it. Dr. Miller may get rid of what he calls European foul brood, but I don't believe it is as hard to get rid of European foul brood as it is American, and that the plan he suggests will not succeed with American foul brood.

I kept watching my hives, inspecting them closely, and treated those colonies that had foul brood in the second and the third time. I tried the McEvoy plan, and found that to be successful in instances, and also tried the Baldridge plan. I like this very much if the bees are all of a size, and they never slip past the bee-escape. You can save many colonies by that method, providing the bees don't get in there and get out again and carry the diseased honey.

I have tried putting them into a new hive, and have put coal oil, or kerosene, on some hay in the old hive, and set fire to it, so as to destroy everything of living kind inside. You have got to stamp the disease out; you have got to destroy the germ! Foul brood is not curable by any medicine or application that you can use on the combs, or feed to the bees. There is nothing known now by which you can reach the disease in the way of medicinal

application. You have got to do the same as you do in the case of small-pox. The patient is quarantined, and if the patient gets well or dies, the place is disinfected; you disinfect the premises and everything about the patient, and you have to do the same thing with your hives. Now, I don't know about this thing of disinfecting hives, whether it is necessary in every case or not; I don't believe it is. Some times all that is necessary is simply to lift the bees out of the hives, take the combs away, and brush them down in the hive. Give them comb-foundation, say, a strip nearly two inches wide, and fasten that to the top of the frame, and give them six or seven strips, and leave them in possession of that from 36 to 48 hours. They will consume all the honey that may have been spilled about the interior of the hive. If you leave them in from 24 to 48 hours, then take that away from them and give them full sheets of comb-foundation, the disease ought certainly to be considered cured. You take the strips away and give them the full sheets of foundation; I have never had it reappear again when thus treated.

I have it about stamped out. I have two colonies I have an eye of suspicion upon. I have marked them, and I shall watch them in the spring, every day; that is what we have all got to do. If you don't use every precaution and care, you will have foul brood creep into a colony where you have never had it before, and what will cause this? A bee or two will get into the hive, from a diseased hive, and carry some of the honey with them. I have decided that the safest way, when you have a colony infected with foul brood, is to take the hive clear away to a location beyond your apiary. As for the combs, I put them into gunny-sacks as fast as I cut them out of the frames, and burn the frames up; some I put in boiling water; boil them for half an hour or more, and I don't know but what I will burn them up yet. I understand these microbes will live from 15 to 25, or even 30 minutes in boiling water; carbolic acid does not destroy them; nothing except to put them in hot water and boil them persistently for half or three-quarters of an hour.

You have to cut off every avenue of

the diseased bees escaping and carrying the honey with them, and about the surest way to do with the frames is to burn them up, but I don't think that need to be done every time. It is going to take some work to boil them and fit them up, and I believe I would just as soon buy new frames as to clean up the old ones.

But, now, gentlemen, maybe I am taking up too much of your time. I have not come four or five hundred miles for the fun of it. I feel interested in your welfare, because yours is ours. If you have foul brood here, we are sure to have it, and if we have it, you are sure to get it, because queens are shipped and honey is carried from point to point, and you will have it carried in this way.

I would suggest that you have a Legislative Committee here of not less than ten—from ten to fifteen men—to spend as much time as they can at the Capital during the session of the Legislature. Let every one consider himself a committee of one to write to his Representatives and Senators, and see them, also—have a personal interview with them, and point out to them the loss that is bound to occur if something is not done, and an individual or two like the strong opposer in the northern part of Illinois may come down off his perch. I understand he is willing to do something, but that he is afraid some crank will get to be inspector, and go round and burn up all the hives, in order to favor Mr. Dadant and bee-keepers' supply men! I don't believe that; I hardly think that Mr. Dadant would do that!

Another thing we have got to do: We must require the law to compel a bee inspector to disinfect his clothing; wash his hands, also, before he goes from one apiary to another, after he has been where there is foul brood. I almost invariably use a weak solution of carbolic acid. I some times come into the house and my women folks will start up a blaze in the gasoline stove, and stick my hive-tool in there. It is so hot that I can't pick it up; I take it out with tongs, and lay it away until it gets cool.

It is not safe at all to take a tool you use, from one hive to another, and use it.

I treated a bad case one day, and when I got home I took off my bee-

hat and immersed the hat, veil and everything in boiling water. I took all of my clothing off, and I often shampoo my head.

Oftentimes when I am working where I have foul brood, and get a scent of it, it will be several days before I can eat a square meal; that is, where it is very bad. You have to have a pretty good stomach when you run across a bad case like that.

I don't want to take up too much of your time, but there are a few more things I would like to call your attention to.

I notice that I was placed prominently on your program here, and it makes me feel a little bashful to come to the State of Illinois, where there are so many bee-keepers, and undertake to teach them how to manage their apiaries when they get foul brood, and to get foul brood legislation.

I am only offering you a suggestion; you may have suggestions away ahead, above and beyond me. I hope you have, because we have trouble enough in our State to get through the laws we want. Two dollars a day don't pay a man to be bee-inspector, yet our inspector does it. We can't afford to pay more, and he said, for the sake of getting rid of the conditions that exist relative to foul brood, he will go at \$2.00 a day. We want to increase it to \$3.00, and then to have the law give the bee inspector jurisdiction over every county that didn't have 25 bee-keepers, and, if possible, get the number cut down; have it reduced to five—upon the application of five bee-keepers the county commissioner shall appoint a competent person. They didn't want to appoint a commissioner or inspector in our county; they said: "You are going to pile up more expense on us; the bees don't amount to much." I said: "They amount to something; you like honey, don't you? And you need sweetening as bad as any of us, and we would like to have you appoint an inspector," and they did so, and appointed the man I recommended. I said that, if he is not competent, I will help him out when he gets into trouble.

I don't know what shape you have got your Bill in; what you propose to do; whether it is a general law, asking for one, two, or three thousand

dollars of an appropriation. Our Legislature said to us: "It is a good graft, to appoint a man to look for bugs; we talked to the Governor, and he would not approve the Bill. He said: 'Why should we palm this off on the people?'"

The only objection that the county commissioner urged against, after they really understood it, was, that the bees are not taxable in the State of Kansas. They are, if you instruct your assessor to assess them. It is not so with us, but it is with you. "I am willing that we should have our bees taxed," I said to him, "if you will only protect us, and not allow the disease to run rampant all over the country and destroy them." A commissioner of the law might be a good thing to start on, if you can't get something better.

If you can get \$2,000 appropriation, and have deputies appointed to go over the State, that probably would be the most effectual. Competency is the thing you want to look after—you want to have a competent man.

President Kildow—It seems to me that we might have a report, or suggestions from any one else who has anything to offer.

Mr. Moore—I found, in doing inspection work among bee-keepers, that some of the big bee-keepers are not altogether in favor of a compulsory law, because the small fellows—the farmers that have a few colonies of bees infected with foul brood—say: "We can keep ours under control." And the large bee-keepers say: "Let them go; by a year or so, when they are wiped out, and we all have a better market for our honey."

A Whiteside county man has 450 colonies of bees; all around him is foul brood; he has a little, but keeps it under control. There have been, during the last two or three or four years—I expect there have been several hundred colonies of bees in that county that have died from foul brood. He says: "I don't care whether they clean it up or not; it will only be a short time when those small fellows will be wiped out; then they won't have any bees left."

I think, as Dr. Bohrer says, if we go before the Legislature and have a Committee on Laws instead of an Ap-

propriation Committee, and, by personal work with our Representatives and Senators, we will accomplish something.

The great majority of those men know nothing about the bee-business, the honey-business, or foul brood. If we go to them personally, the men we are acquainted with, and explain this matter to them, show them the amount of money invested in bees and bee-appliances in the State of Illinois; tell them of the honey crop; the value of it, compared with other lines of farm produce, they will recognize the importance of such an industry and the necessity of giving us the protection we ask, and what we should have. I think, if we keep hammering along this line, we will get it. If we can bring some pressure to bear on these fellows that are opposed to it, and get them to change their minds, we can swing them our way.

In regard to the foul brood that Dr. Miller has: It seems to me that is more dangerous, if anything, than American foul brood. The bees clean that dead brood out of the cells; carry it outside, and the winds scatter it all through the apiary. If the bees can remove it and carry it out—it is bound to stick on their feet—they carry it to the flowers or drinking place, and another bee comes along and gets it. It ought to take more radical means of treatment than American foul brood; it seems to me there is more danger of infection than that of the American foul brood.

Mr. York—I understand there have been others in this State who have been deputy foul brood inspectors; we might hear from all of them.

Mr. Stone—I want to say one word in recommending—or whatever you want to call it—Dr. Bohrer's address. When we go before the Legislature, and take a copy of this report (we will have it in print), and ask each of the Representatives to read it. That address of Dr. Bohrer's before this convention, I believe, will weigh more than anything we have ever put before them. I think that is a fine talk for this occasion.

Dr. Bohrer—Let me make this suggestion: If you do that, summarize it; get it condensed; get the points, and show the amount of sales—you can, from statistics—amount of capital

there is invested in the bee-business in the State of Illinois, and how destructive foul brood is, if not controlled, and that the industry now is threatened with destruction—will be, just as sure as fate, completely destroyed if you don't get legislative control; otherwise there will be no help for it.

Mr. Becker — In going about inspecting bees, I find there are so many men that are indifferent, and if there is any indifference at all, they rarely know anything about bees, and that, all the work the inspectors can do, it is simply a matter of education; if they don't want to be educated, it is simply money thrown away. Many are too indifferent, and they will hide the fact that they have foul brood in their apiaries, if possible. I know one case, particularly, where a man's bees had foul brood two years ago. I went there this fall to see his bees; he told me about it a year ago, and I examined the bees, and I am satisfied that he had foul brood still last spring, from the way he talked and from the indifference that he manifested in regard to the bees. He didn't care about bothering them; he had a little honey, and he didn't care; and there were apiaries with numbers of colonies of bees right around there.

I know of another case, where they wanted to examine a man's bees; he had foul brood all around him, yet he didn't want his apiaries examined. He said: "You can go and look at them, but I wish you would not disturb them."

I find this is true: There is more foul brood than there was a year ago. At Bloomington, a bee-keeper said the first time, to his knowledge, foul brood was in their neighborhood, it was within two miles of him. "Why," he said, "I suppose I will have it among my bees the next thing you know." If you have it in your neighborhood, you are very apt to get it sooner or later, and we have to have a law that will give a man power to act—power to go in a man's apiary and examine and inspect his bees, regardless of consent or no consent. It is up-hill work.

Another thing, we people that are assembled here from various parts of the State, why, we are taking an interest in it. We don't want foul brood,

and nobody really wants it, but how is it with parties living in our neighborhood, that have from two to twenty-five colonies? Can you get them to take an interest in this work?

There are seven or eight bee-keepers in my neighborhood; some have twenty-five colonies, others only two colonies, and I have tried to get them to take hold of this work and join our organization. They want to know all about foul brood, and they come to me if anything gets wrong with their bees, and that is the end of it; and I suppose that is true in all other localities. If they have a big honey crop, they make their brags about how much honey they have, and when they haven't any, they want to know what is the matter, and that is all they care about it.

One great trouble with our legislative laws, there is so much about it that is simply a matter of politics, and they don't care for any business, and the business that really was before the Legislature last time was transacted in one week's time; the balance of it was simply politics. Each party wanted to try to get the best of the other, and they didn't care what they were doing until the last week, and then there was not time.

All winter we should have this business in mind; let the committee have it up with their Senators, and with members of both Houses; discuss the matter; visit with them. When the committee did get to it, it went before a committee we didn't expect it would at all, and they had no time for us.

Mr. Pyle—I don't know whether it would look very good for a man of my age to attempt any discussion before so many more experienced men, but there are some few things I have found out myself, with reference to foul brood—perhaps not found out new, but things that I have come to the conclusion of. One is, that in the successful treatment of foul brood, there is just one thing to do, and that is, to get rid of the germ; and there is only one way to do that, and that is, to get the bees entirely away from it. If you will take your hives and shake the bees, either on full sheets of foundation or starters, or any way, so you get the bees off the honey, the same old hive will do; carry your bees into

the cellar, leave them there for three days, and bring them out and feed them, and you have the job done. I will guarantee you will have no more foul brood. You don't need to destroy your hives. Take some sugar syrup; shake that over the bees until they are fairly damp; put a quart, or two quarts, of feed on top of the hive, and in the morning they will go out and get to work; and in one week's time your colony will be in good condition. The Baldrige plan is a success nine times out of ten, with a little care.

I had an experience with one colony of bees that we shook at least three times, and they developed foul brood every time; it broke out in the same colony. Finally I had to destroy that brood. If I had 150 colonies of bees, and found one hive out of the 150 had foul brood, I should certainly burn it; if I found twenty-five, I would surely treat them on the plan I tell you of.

J. Q. Smith, the Late President.

Mr. Dadant—I offered to prepare a paper concerning the work of our late President, and, under the circumstances, I thought best to write to his widow, and ask her for the data that was not in my possession, in order to be able to state what he had done; but I had the misfortune of my letter reaching her when she was sick, and, perhaps, away, for I got her answer only a day or two ago, and she was then in Texas. I didn't understand whether she was already there when my letter reached her; at any rate, she was unable to furnish me any data. I could have put in my information what was already in the American Bee Journal, but I thought best not to do that; so that what I have concerning our late President concerns only the question of foul brood. It seems to be the question of the day. The paper is as follows:

The Work of Our Late President and Its Continuation.

Very few people have an adequate idea of the extent of the disease known as foul brood all over the world. As bee-culture becomes extended and apiaries enlarge, the chances for disease enlarge also, not only on account of the greater number of hives, but, also, because of the greater traffic,

purchase and sale, shipping and moving of bees and bee appliances. The growth of bee-culture has exceeded the expectations of many. Careless bee-keepers have gone into the business with inadequate information, and have made a failure. In numerous cases, it is through these incapable men that the disease has spread. In olden times, the entire lack of knowledge caused but little trouble, because there was comparatively no shipping of bees. When a man failed, his hives were destroyed, or used for hen-coops, and there was an end of it. As apiaries were quite a distance apart, the spread of diseases as contagious as this was prevented, much as a fire goes out at the edge of the forest; it burns itself out.

Today, with our improved methods and the business of bee-culture becoming every year of greater importance, it is most indispensable to take strenuous means for the abolition of foul brood. As with the white plague, the dreaded consumption, which cuts down so many useful men and women, it is necessary that everyone should know that the disease is contagious, by what means contagion is spread, and they should also know that there is a positive cure for this, as well as for consumption.

Our late President, J. Q. Smith, who has so long served as one of the most useful members of our State Association, was long ago initiated in the cure of foul brood. The museum of the State, in the Capitol building, contains a sample of foul brood, supplied by him years ago. He had found the malady among his bees, and had eradicated it.

Since the State of Illinois has given financial support to our State Bee-Keepers' Association, Mr. Smith has acted as our inspector, until his death. Hundreds of cases have been cured through his indefatigable efforts. But much remains to be done. Another man is needed, as active as he was, and as devoted to the cause. The allowance given by the State for publishing our annual report and for fighting foul brood should be sustained by a law similar to those of most of our neighboring States, a law which will make it a penal offence to knowingly keep, ship or sell contaminated colonies. As a rule, apiarists are progressive men,

and it is sufficient to call their attention to the disease to secure their help in eradicating it, but nothing must be left to chance.

On the other hand, there are many instances where mild diseases are mistaken for the contagious disease. I have myself, in several instances, comforted bee-keepers who imagined that their bees were suffering from foul brood, by an examination, which revealed that the trouble was due either to chilled brood, or winter losses.

It is, therefore, of the utmost importance that a good, experienced man should at once take the place of our late inspector, and that the bee-keepers of Illinois should unite in giving him ardent support, so that those who may call upon him for help in curing any infected colonies may be readily relieved, at the least possible expense, and with the least possible loss. There was a time when apiarists thought that nothing short of destruction of the diseased colonies would secure results. This has long ago been proven an error. But great care is needed. The disease does not exist in many places. Active work will sooner or later put an end to it.

Let us, then, unite, both in demanding from our Legislature some practical foul brood law, and in selecting a good, efficient foul brood inspector, who will receive our undivided support.

C. P. DADANT.

Mr. Bowen—If I mistake not, there are quite a number of men present who are candidates for foul brood inspector, and this may be a good chance for them to show their ability before the convention, by expressing themselves. I don't know a better opening for them than right here and now. I would like to hear from each of them. I understand they are all in favor, except myself, of being appointed inspector.

Mr. Coppin—A few instructions should be given to bee-keepers. One thing is in the case of bees dying. A bee-keeper should be instructed not to save the combs, under such conditions, and use them over again. I think that is where foul brood is spread a number of times. If the bees have already died with the disease, and he doesn't know it, the bee-keeper simply goes

and puts bees on the same combs, instead of melting them down.

Mr. Moore—I have acted as deputy inspector, and, as I have been informed, quite a number of other bee-keepers here have acted as deputies, and they are all for the office of inspector. Now I have had a little experience with foul brood myself, in my own apiary, and have had a little work, and some experience with it in inspecting other apiaries. I always advise a man who has foul brood to destroy the combs; never to save any combs.

If I should get foul brood in my apiary, I should practice the "shook" plan, destroying all the combs, and in that way manage to keep it under control. I never advise anybody to burn hives or frames, because they can be saved; but combs you can destroy and render them into wax and get your money out of them. It is a very simple matter to save your hives.

Although we have lots of evidence from those who put their bees in the hives, without taking any precaution, and have had no return of the disease, yet we do have evidence in many other cases where the disease has returned, and, with little trouble and expense, it is better to take that precaution. The hive covers and bottoms can be disinfected with a very few cents expense, and very little trouble. The frames (if enough of them to amount to much, after cutting out the combs) can be boiled in lye water, and they are made safe to use again. If there are only a hive or two the frames could be burned up, but I never advise, in my inspection work, to destroy anything we can possibly save; and so far as this plea that has been brought up, I don't believe there is a man in the State Bee-Keepers' Association who would accept this office of inspector, who would force a man, or advise him, to burn his hives to make business for some dealer.

I would not advise my own customers to burn anything, and I don't believe there are any dealers in bee-keepers' supplies that would urge a bill of that sort, to benefit themselves. I have had considerable dealings with a good many and have found them honest, and I don't believe there is one who would advise anything of that sort.

Mr. Bowen—Don't you believe boil-

ing water would be as effective as to use lye?

Mr. Moore—Concentrated lye would clean the frames thoroughly, while boiling water would not do it.

Dr. Bohrer—I would ask if our State Horticultural Society gives bee-keepers any encouragement in any way? Do they affiliate with us in any way? Do they allow us to go before them and discuss matters? It would be a good thing if they would allow us to do this.

We used Mr. Dadant in this way. I had our State Horticultural Society agree to let him read a paper, and it was published in our Horticultural Report. Anything of that kind has a tendency to educate somebody—if it meets only a few people it is worth while. Bee-keepers have been pretty modest in all the States; you have an appropriation of \$1,000 a year, and they have appropriations in Nebraska and Minnesota.

If you can ever get interest of that kind going, the time will come when the rudiments of bee-keeping will be taught in common schools, as it is in Germany. I believe that the time will come here if we can reach out, and we ought to try to urge it, through sources of that kind; it is worth a trial anyway.

Bee-keepers have been very modest out with us. I was sat down on when I first wanted to have the paper discussed, that Mr. Dadant read, but afterwards they came pleading to us for help; said that the State Legislature was going to kill the Horticultural Society, and wanted our help.

In the matter of educating bee-keepers—educating the people on bee-keeping—come thirty-two years ago Professor Anderson came to me, in Topeka, when I was in the Legislature, and asked me to go up and deliver a lecture before the students. He said, "We want to teach that industry in the colleges, and there is no man or child here that knows anything about it." I went up; they gave me an hour, and I don't think that I ever addressed a more attentive audience before or since; you could have heard a pin drop all over that house. I simply took up the queen, the worker and the drone, and their habits—how they were to be controlled. And there is another thing I would impress on bee-keepers, and that is, about going into cages and manipulating bees, and in explaining to people how it is done.

I was judge of an exhibit at Hutchinson, Kans., and there was a man there who delivered a lecture, who put in three hours, and if he gave one sentence that was valuable to bee-keepers of that country, I could not find it; he made the people believe that he had a wonderful magnetic influence over bees that nobody else possessed. We want to shut down on this sort of thing; we don't want to tolerate anything of this sort; it is not right. If a man goes into a cage to exhibit bees, let him tell the people how it is done. When bees are loaded down with honey they never act on the offensive, but on the defensive. You can take them in any cage and handle them so long as you don't pinch one of them. The young lady this afternoon didn't tell the whole story; she started to tell about bees getting into bed with the man. Some one told me of a schoolteacher; a little boy, where the school teacher stayed, had to sleep with him; he was in the habit of kicking and tossing in his sleep, and the school teacher would punch the boy. You know boys sometimes get to talking in their sleep; this boy wanted to get even with the teacher, so he went to a bee-hive and got a dozen or two bees, and put them in a bottle and took them to his bedroom. He put them in bed, under the cover, on the old school teacher's side of the bed. Well, they had been in bed only a short time, when he began slapping himself and making the greatest fuss, and he declared to the landlady she had the biggest fleas he ever run across in all his life!

Mr. York—That must be "another story."

Dr. Bohrer—That was no story; that was an actual fact.

Mr. Stone—When we first got an appropriation and started out to find a foul brood inspector, we looked all over the State for one; application was made to different parts of the State, and we could not find a man who was willing to be foul brood inspector. Our president was Mr. Smith, and he said he had experience in wiping it out of his own apiary, and knew how it had to be done, and he expected he could afford that much time, and he would try it. Now, at this time, it does not seem that we have any trouble in getting a foul brood inspector. We have

quantities, everywhere, and the principal thing for us to look after is to get a man who has had good experience; to get a man who is competent, and honest, so that when he says he spent ten days in July and ten days in August, you will know that he spent this time in inspecting and not sitting at home doing nothing, or staying at home doing work with his own bees. We want an honest man, in the first place; then we want a competent man; and then, in the third place, we want a man that is in the midst of us, one who is centrally located. Our candidates are pretty nearly all of them in those positions, so it is going to be a pretty hard matter to select an inspector. I hope you will weigh this matter well before it comes to the election of a foul brood inspector.

Mr. York—I would like to ask, Does the Governor appoint the foul brood inspector, or he is appointed on the recommendation of this Association?

Mr. Stone—We have no foul brood law.

Mr. York—How do you get your man appointed?

Mr. Pyles—We elect him, and that is all there is of it.

Mr. Stone—I will tell you how that is, Mr. York. In the first place, the committee in the Legislature said they could not give that much liberty to the State Bee-Keepers' Association; that the Governor must have the appointing of the foul brood inspector. Then they turned around and gave us an appropriation and let us do it all ourselves.

President Kildow—I don't want to take up much of your time. I do not talk in public, anyway, but as I happen to be a candidate for the inspectorship, you can see who I am. I have had lots of experience, and have been through the mill. I have helped our late inspector do considerable work, and believe I understand it. I have treated foul brood in all ways that are known, but I am not much of a man to blow my own horn, so I will just leave it to the bee-keepers.

Getting Rid of Foul Brood.

Mr. Dadant—What is the best method of stamping out foul brood?

President Kildow—The method I like the best is to shake the bees in their own hives, or brush them on empty

frames. Put them into the cellar and leave them there thirty-six to forty-eight hours until they have practically consumed every drop of honey; then take them out, towards evening, and give them some warm syrup—sugar syrup; it does not entice robbing, when there is no honey coming in; feed them daily until the honey does come, and I don't think one case will ever return to foul brood. I have burned frames, but never hives.

Mr. Dadant—Don't you believe in disinfecting the hives?

President Kildow—Sometimes I take a bunch of straw, turn the hive over, and scorch it, but where you shake the bees in the hive, they will clean it all up; I don't think anything but just the honey will carry foul brood.

Mr. Stone—You shake them in their own hives?

President Kildow—Yes, sir. They consume everything in there.

Mr. Coppin—Instead of putting the bees into the cellar or starving them, I generally practice having some cracker boxes, or something of the kind, and hive them in that, and let them work for forty-eight hours, and then give them a clean hive, with full sheets of foundation; but we can't tell for certain as to whether that stamps the disease out or not, because we go ahead with our work, and finally we sometimes find the disease in other hives that we had not found before. Where did they get it from? We are just as liable to find some in those we have treated. There is no dependence to be placed upon any certain treatment being better than another, because they are going from place to place. There is a colony that is affected, the germs are around, and they get it. It is quite a problem—quite a question—to tell for certain which is the best way. I don't believe in giving them a hive that is not clean. I generally boil them before I use them again.

Mr. Bowen—Allow me to inquire what your success has been in using empty combs which have been in two-story hives, when the brood next was infected with foul brood? Is there any method of treating it with a solution of formaldehyde? Have you ever treated them in that way? Have you had experience with that?

President Kildow—I have never used

any of that. In regard to brushing them, I don't like to brush them on the outside; you are liable to scatter something on the ground. That is why I like to shake them in their own hive; the same bees will get it back and clean it up; if you shake them on the outside, you are liable to shake some of that stuff where some other bees will get it; keep the bees in the hive until everything is consumed.

Mr. Bowen—I would advise not to shake them at all, but to brush them.

President Kildow—To brush them I like better; do it towards the close of the evening, when the bees are rather quiet and in their own hives.

Mr. Stone—In answer to one thing Mr. Bowen has named, when our foul brood inspector was in, the first year of service, I think it was, we went to the expense of preparing boxes for bees to be treated in, using formaldehyde, and he said that was recommended by some university or experiment station, I won't be certain which, but it never materialized; it didn't work out for some reason, and I never asked Mr. Smith why.

Mr. Bowen—If there is a little something in the comb, it might destroy it.

Mr. Stone—That is for treating combs and hives.

Mr. Bowen—I asked the question, in using empty combs, I have always been afraid to try it; that is the reason I asked the question.

Mr. Moore—In regard to the treatment of formaldehyde, from what I know of it, it is very doubtful if you meet with success in its use unless you have a special apparatus; and something that will keep the fumes in closely; otherwise, it is doubtful if it will have much effect. You take the spores of foul brood—in a comb where they are protected by honey—the formalin gas won't penetrate that honey enough to kill that spore. As I understand it, this spore is not a germ; it is of vegetable nature; it is not an animal organism. It takes different means to destroy it; extreme cold does not affect it. I don't think the formalin gas would have a great deal of effect on them, especially in combs where the scale is dried down and adheres to the wall. I don't believe formalin gas will penetrate enough to kill those spores, and if there is any honey in there that will dissolve, the spores will grow up

in the honey and be fed. If you take an upper story of combs that have been used for extracting, never had any brood in them at all; if they are cleaned out perfectly dry and clean, no honey left in them, the formaldehyde treatment might work, by putting them in an air-tight box; it must be an air-tight box, and give them several hours of formalin gas, it might make them safe, but the expense and trouble would be all the combs would be worth.

Mr. Dadant—The European beekeepers had a great deal of experience with foul brood before we did on this side of the water. They used chemical antiseptics, not generally to cure the disease, but to prevent it. I heard one gentleman here say you never can tell when it will appear; it comes from somewhere. Their aim, when they have done away with the disease, is to try to keep it from coming back, and when they feed in the spring, they put some antiseptics in the food. It seems to be a common custom to put chemicals in the honey to feed to the bees. There is not any doubt that the most of the disease comes through the honey, although Mr. Cheshire says he could not find the bacilli in the honey.

European foul brood has been described in Europe, while American foul brood has been described by Dr. White at Washington; the only difference between the two is that one can be produced with beef broth, while the other can only be produced by larvae of the bees; that is what is called *Bacillus Larvae*; Dr. White said it could not be produced in any other way.

The disease described by Cheshire was found in the body of the bees as well as in the combs, and they did not find it in the honey. This disease, we think, is what is now described as European foul brood. The disease that Dr. Miller had among his bees is European foul brood, and in spite of what Cheshire might say, is evidently transmitted by the honey.

Some say that it is not necessary to disinfect the hives; this makes me feel that something was left undone. If you should not disinfect your hives, then why wash your hands? I think it is of some importance that we disinfect the hive. The method I recommend is to use the blow-lamp; that

lamp contains gasoline. Run it over the inside of the hive and you can heat every corner; do the same thing to the frame, and anything at all that has been touched by the bees. You understand, I am not a candidate.

Mr. York—Mr. Dadant spoke about the people in Europe using some kind of a chemical preparation, some kind of drugs—don't they do that mainly to prevent the disease, rather than to cure it?

Mr. Dadant—Yes, after they have had it and cured it; then they use the drug to prevent it.

Mr. Pyles—Mr. France and Mr. McEvoy say it is not necessary to disinfect the hives. I am not going to say it is not necessary, absolutely, because it might be, but in dozens and dozens of cases, where I compelled the bees to use up all the honey, where there would not be any possibility of honey being left inside the hive, I would think it would hardly be necessary to treat the hive; not in such cases. If honey is the place where the disease develops, if that is the medium it is carried from one hive to another, and you can compel your bees to use up all the honey, I don't see very much need of disinfecting the hive.

Mr. Dadant—Is there any need of washing your hands?

Mr. Pyles—I think there is, but if the bees will gather up every particle of honey that it is possible to gather up, they can never gather up more after that. Ordinarily, in speaking of brushing bees, it is done at a time when new honey is coming in, and I would not be much afraid of new honey. It is a pretty hard matter to find any honey that has been in the hive for a long time, to find any around your hive unless you break a comb. Foul brood will almost disappear at times when there is a great flow of honey—almost disappear from a hive that has got it pretty bad, but just as soon as the honey-flow stops, then you have a lot of dead brood. Mr. Johnson, in talking on this question, two or three years ago, of the use of formaldehyde, said that there were two great disinfectants—formaldehyde and sulphuric acid.

I don't think it is necessary to treat the hive after the bee is placed in that condition where it uses up every bit of the honey.

I advocate shaking bees instead of brushing. You can go to a man's place and shake his bees and carry them in the cellar, leave them three days, and he can carry them out. If you scatter them around the yard, other bees will gather the honey. If you brush them off, what are you going to brush them off with, or if you have a brush, are you going to be careful that every sprig of that brush is left there and not scattered; if you are going to do that, do everything to the letter; I don't know where that would end. If you have a common bee brush, made from broom-corn, are you sure there is not going to be one of those pieces drop off? I don't use a brush in my hives; I shake the bees.

Dr. Bohrer—Why wash your hands after shaking bees, or opening the hive and handling the frame that has had any disease in? I do it for the reason that I don't know how often I may have a broken honey-comb and get the honey on my fingers; there is where the germs are, said to be the foul brood germs; for that reason I don't take any chances, but wash my hands well and get rid of it. You don't know, if you open a hive, ever so careful, if your mind happens to be off from it for a minute, you may touch the comb and break it and get some honey on your fingers; and at the rate with which these spores multiply, you would have your hive full in a few hours or a few days; that is, then, the reason you want to disinfect your hands in handling the hive.

Mr. Dadant—I still hold to my view, that if we think it is worth while to wash our hands, it is worth while to disinfect the hives, because what happens to our hands will happen to the hive; if you shake the bees, some honey has touched that hive; if your hands can take the disease, the body of the hive will. It seems to me that if one thing is safe, the other is safe, and, although it may not be absolutely necessary, still, I think it is a good thing to do.

President Kildow—Another point: These spores are so small that where a drop of honey containing spores enters the hive bottom, or the walls of the hive, that pine absorbs more or less of that honey; it carries the spore with it, and the spores will be transmitted; for that reason, to be on the

safe side, with so little trouble and expense, I say it is better to disinfect the hive.

As far as brushing is concerned, the inspector should carry a little vial of carbolic acid, to use when he gets through brushing. If he uses an ordinary brush, he is not going to have many loose pieces of brush, and when he gets through he can wash his hands in that carbolic acid solution and wash his broom out, and there is no danger of infection from that; he can go to the next hive, and he can wash his brush or burn it.

Mr. Pyles—Would you believe it is possible to kill the spore of foul brood with a solution weak enough that you can wash your hands in?

Mr. Moore—It would stay there in the water; a very slight solution of carbolic acid would destroy it.

Mr. Coppin—Before I start the work, I take a number of grasses, put a bit of twine around them and make my brushes; I brush the bees off, in order to prevent spilling any on the ground; I brush them off in front and let them run in as quickly as I can do it; then this brush can be burned up and get beyond the reach of the bees as quickly as possible; that is less trouble than washing; it is the best bee brush I know of.

President Kildow—I have used the Baldrige plan a good many times; it is all right if you are around your apiary, so you can look after it; it is all right if a man is in his yard all the time and has good hives, where he can watch them, but you want to know your bees.

Mr. Bowen—They sometimes will slip out through the bee-escape; the bee-escapes are not always perfect.

Mr. Coppin—I have never tried that method. What is there to stop the bees from the upper hive in rearing young queens?

President Kildow—I have had them rear them a number of times, and have had the young queen get out of the bee-escape, but not generally—not as a rule.

Mr. Werner—Very seldom.

Mr. Moore—It would not interfere with the success of it if they reared a young queen. She would get out through the escape, and the chances are when she got below that either she or the old queen would die.

Mr. York—If the discussion on foul brood is finished, I would move that we make a list of the names of the men who are candidates for foul brood inspector; I don't know how many candidates there are here. It seems to me it would be well to proceed to elect some one; undoubtedly, there are several candidates here who are well qualified for the position; so far as I know, one is as well qualified as the other; if we elect one, in case deputies are needed, he can appoint.

Mr. Stone—When we have a foul brood inspector elected, he will be a competent man, and he will find a man to assist him who is just as competent; and when he finds a neighborhood in which there is foul brood, and finds a man in that neighborhood that is competent to handle foul brood, and can do it cheaper than he can, he will employ that man to do it; like our late foul brood inspector did.

I am going to nominate a man who, as our late President said, can do the work just as well as he could, so he sent them to a man that I shall name.

I don't think we can be too careful about this, to get the right kind of a man in.

Mr. Bowen—I would not be in so much of a hurry about selecting a foul brood inspector. I went into the Odd Fellows' Lodge this morning; there was a big crowd, and I made inquiry as to the cause of such a crowd, and was told they were getting their warrants for their pay. What did that mean? It would mean that if you go into the Odd Fellows' Association this afternoon, you would find it very much depleted in numbers, because many of them have got their pay and gone; a good many of them—that is about the main interest they take—getting their pay.

A number of the men here are interested in becoming foul brood inspector, and if a foul brood inspector is selected now, I think we may find ourselves depleted in numbers, so I think we would better wait and elect a foul brood inspector tomorrow!

Mr. Bowen—Before we elect officers or inspector, we should have a report from the Auditing Committee.

Mr. Moore—You will have that the first thing in the morning.

President Kildow—Any special time for election?

Mr. Stone—We generally hold it in the afternoon, but the last time it was in the morning.

President Kildow—I would suggest we appoint the time we shall have the election, and would also like to ask that we try to get through with this business by noon tomorrow; as a rule, there is very little business in the afternoon of the second day, and some of the members want to go home. I would like to have this done, if we can get through.

Mr. York—I move, then, that we set the election for tomorrow morning at 10 o'clock.

Motion seconded and carried.

Mr. Stone—I move we take a recess until tonight at half-past seven, and have a night session and a question box.

Motion seconded.

Mr. Moore—I am a little dubious about a night session.

Mr. Dadant—It is only four o'clock; why can't we have a question box before we adjourn?

Mr. Stone—I withdraw the motion to adjourn.

President Kildow—I think it would be a good plan to have the question box. We have not had any yet; I think that is one of the good things of the convention. Anybody that has any questions, the Secretary will pass the slips and collect them.

Drug Treatment of Foul Brood.

President Kildow—Here is a question for Dr. Bohrer to answer:

"How strong does carbolic acid have to be in solution in order to destroy the spores of foul brood?"

Dr. Bohrer—Persons that have tested the matter, I heard Dr. Phillips say, or Dr. White, spores kept in solution of carbolic acid over night, were living yet, some of them; I don't know how strong the solution was. When I have made a solution in which to dip my hands, after coming from the hive, before washing them with soap, I have added a teaspoonful of carbolic acid to probably a quart of water, and I would just immerse my hands in that, and give them a good scouring with soap; but I won't guarantee that will kill them; I thought it would, until I heard Dr. Phillips, or Dr. White, say they had been kept in a strong solution over night and were not yet dead; I don't know how long, that being the case,

nor how strong the solution should be to do the work completely. I have never handled any since I heard them read that paper. I have even gone so far as to scrape my hands.

We don't know enough about certain matters definitely; we are in the dark about a good many things; as to the original cause of these spores—these germs that spring into existence—we do not know anything about it. It is a matter for future investigation, and to be ascertained, if it is learned.

President Kildow—It stands us in hand to use all the precaution we can.

Dr. Bohrer—Cut off every avenue of spreading the disease by contagion or infection.

Honey From a Foul Broody Hive.

"What can be done with honey in a foul broody hive, where the bees have been removed?"

Dr. Bohrer—I wish somebody would answer that; I have several gallons in ten-pound buckets, and I don't know how I can use it safely, unless I boil it, and that I understand would destroy it for table use. I might feed it to the bees—boil it quite a time—and then I guess it would be injurious to the brood. I am hesitating as to whether I shall dig a hole and put it in and bury it, beyond the power of the bees or anything, or anybody, getting access to it. I won't sell it; some sell it to confectioners and to bakers, but I won't do anything of that kind. If you set a bucket out somewhere that has honey of that kind in it, and a bee should take a dose of it to the hive, there it spreads again. The safest plan I know of is to get rid of it; I believe that is what I will do.

President Kildow—I have had a little experience in that line, extracting it. I boil up a good many boilers full; stand by a full hour stirring it, but I have always fed it back to the bees. I never sold any. That is all I would do—boil it well and feed it back to the bees; otherwise it would go into a hole. I have never had any evil results from feeding it, but have boiled it for a full hour, and you want to keep stirring it.

Mr. Moore—I would ask if you have any repugnance to using it for cooking?

Dr. Bohrer—I have thought of using

it in my house. It does not poison the honey. It does not hinder its use on the table as food; but, be as careful as you may be, and some of your bees may get into the house, and the first thing you know they have a taste of it, and carry it back to the hives. I think, like the man said who was trying to sober up, the best way to sober up was never to touch a drop of whisky, but let it alone.

Mr. Coppin—When we have a lot of honey that is not very dark, I hate to throw it away, so we generally try to use it up in some shape, in the way of cooking, or for table use, or something; but keep it away from the bees. We generally try to make use of it in some way. We don't like to boil it a lot, for that would spoil the color and the flavor of it. We make it hot enough to melt it, but we keep it as light color as we can, and utilize it in some way.

Bee Sting and Rheumatism.

"Do bee stings cure rheumatism?"

Mr. Werner—I think not, because I never had rheumatism until I got bees, and had to go some where else to get cured.

Mr. Stone—I don't believe his bees sting. He was handling a colony of bees, introducing a queen in them, and I stood around, as did other people, and one lit on my nose, and it didn't sting me at all, and the people were not afraid of them; but it was not two hours later, I was trying to open the same hive, and I got two or three stings. I believe he had a charm of some kind on his bees.

Dr. Bohrer—With regard to that matter, I think in the main it is correct. It is conceded to be a fact among practicing physicians that a counter-irritant in the case of rheumatism often results in benefit to the patient. Where a bee could sting a number of times, it would have the same effect as a counter-irritant, but it will not drive out of the system, uric acid, which is considered to be the chief cause of rheumatism. We need not look to it as a remedy for rheumatism. A mustard plaster would answer the same purpose, and would not be nearly as painful as a lot of bee-stings. A bee, as a rule, I can't tell where it stings me, in five minutes after I am stung; it hurts, and the pain is acute, but I can't tell where the bee has

stung. I am a little like Dr. Miller; when I get stung, I don't groan, unless I am by myself.

Mr. Crim—I was the one that asked that question. I am not prepared to take up your time now to answer the question, but I will answer the question through the American Bee Journal next month.

A Member—I have had bee-stings, and rheumatism, and have it yet; but I had a boy companion in a hardware store who had rheumatism; he could hardly walk around the store. I had seen pieces in the paper, telling about where rheumatism had been cured by the sting of a bee, and I told him about it. He said: "I am going to try it; I cannot get worse." He came up and bought a colony of bees, so that he could have them at home, and he got the stings good and proper, and he also got over the rheumatism. That was over twenty years ago; but whether it was the stings of the bees or the medicine he took previous to that, I don't know. The bees stung him all over.

Dr. Bohrer—One thing we want to bear in mind: There is no human ailment that has such a long list of remedies as has been used in the treatment of rheumatism. Some times a very simple remedy seems to afford immediate relief, and some times permanent relief; that was the case in the instance of the bee-sting.

Mr. Crim—It is also known that remedies used for the cure of rheumatism, or, in fact, other diseases, may be of benefit to one person and will not help another at all. This is generally supposed to be true, and I think it is pretty much of a fact, myself.

Mr. York—I want to give a little experience I had with bees the past year, in the treatment of rheumatism. A neighbor of mine, a lady, had been troubled with rheumatism for several years, in one ankle, and, during the winter, a year ago, I suggested when the summer came that she should come around, and I would give her a treatment of bee-stings. She laughed when I suggested this; but when the summer came, and the bees were flying, and it was warm enough, she came around and I began by giving her two or three stings at first; in two or three weeks I gave her five or six at a time, and in all, I gave her, I think,

about thirty stings. I kept telling her that she should keep off of that foot as much as possible, especially while it was swollen from the bee-stings, but she did not do it; she played tennis and the like, and did not favor her ankle very much, but it helped her. I asked her husband, after nearly every treatment, how she felt, if the rheumatism had disappeared any, and they both felt that the circulation was helped very much, and the ankle pained a great deal less after being stung. I believe that if she had continued the treatment, and taken good care of the ankle, as good care as she would have done under a doctor's advice, she would have been cured by this time: at any rate, it helped her a great deal. I am a believer in bee-stings for some forms of rheumatism.

Mr. Stone—I once had rheumatism in the left elbow pretty bad. One day there were a couple of bees lit on my wrist, and stung me there. I watched them while they pulled the stings out; they keep on going further each vibration as they emptied out the poison. My arm swelled clear to the elbow, and the next day I could not see a bit of difference; but when the swelling went out, my rheumatism all went away. I know that bee-stings cured that rheumatism.

Mr. Bowen—Bee-stings may be good for rheumatism, but I think good, healthy exercise around the apiary is better than bee-stings; you will then probably forget about your rheumatism. Whether or not there is anything in a bee-sting. I know that one day I went to one of my out apiaries, and I overlooked a space in one end of the hive, and the bees came rushing out and made a strike at my old horse; he had quite a stiff knee and was lame, but after he had been stung he made a dash around there, and I believe if a stranger came along about that time I could have sold him for a three-year-old; it cured him all right.

Mr. Crim—Since you have begun to give experiences, I will give you one. About thirty-three years ago I was a blacksmith by trade, worked in the shop, and I had rheumatism in my elbow and in my hips; sometimes I would have to lie down for a while, it was so bad. It was in the month of June—the weather was pretty warm—

one Sunday morning I dressed for church, and the boys came in from the field and said they had found a swarm of bees on the fence-post in the pasture. I had an empty hive, so I carried it out, took some water, took a broom to shake the bees down on a sheet. I fixed everything ready and went out there, and I got the bees all over my neck, face and eyes; they got all over me and stung me everywhere. It smarted for a while, but never swelled a bit; I went to church afterwards; the bees went into the hive; but I tell you I have not had rheumatism since.

There was a neighbor of mine, about three years ago, and I was telling him about it. He said he had rheumatism so bad and wanted me to treat him with bee-stings. I got two bees one Sunday morning, early, and stung him on the arm. He came the next Sunday morning and I let him have four stings, and every Sunday morning after that he came until he had sixteen stings at one time. The next Sunday morning he did not come, and I never heard him complain any more about rheumatism.

Mr. Dadant—This matter of the bee-sting helping rheumatism, I don't believe we can deny that it has; there are many testimonials asserting that bee-stings cure rheumatism, or that they have helped it, at any rate, but I think there is one thing we have overlooked; the same medicine does not act the same on every person. I can call to your mind an instance you will all recognize; with one man, intoxicants in the smallest dose will act on him in such a way as to make him drunk; while another can stand large quantities; it is the same with a bee-sting; one man will swell all over with one bite, while on another it will take twenty or thirty to do the same thing. You can have bee-stings on certain parts of the hand and you will not feel it. I believe, too, it is necessary to have active stings; stings that will go into the blood, before you can ever be cured. Of course, the man that can endure a great many stings, it will take more stings to cure him from rheumatism than others. Some medicines are absolutely inert on some men, while they act strangely on others. Some people will take a small dose of sulphate of quinine and become dizzy, while others can take double the quantity and not feel it. Although

bee-stings are helpful, they cannot cure in every instance.

Dr. Bohrer—In regard to that, if you examine the standard works on the property of medicines and drugs, you will not find bee-stings classed at all among the remedies for rheumatism; I think I have seen most of the standard works, and have noted the different remedies, and it is not classed among them. Speaking of the peculiar effect a bee-sting has, a horse ran away with me once. A man came to me to go and see a patient. I had a violent attack of lumbago; I had not been out of my house for a week. He said to me that I must come; so I decided to go, and he led me out to the horse block and helped me to get into the buggy. Well, before we got back, that old mare ran away with me, and I had to get busy, and I tell you, by the time I got home, I was entirely cured of my lumbago; that was worse than bee-stings; I never underwent such a punishment. But it cured me of the lumbago.

Mr. York—I would like to ask if a remedy is not mentioned in a medical work, may it not be a remedy? Two years ago, you remember, when my wife had the valvular heart trouble (of which she died later), the doctors found a remedy they tried, called digalen. I don't think you would find that, before that time, mentioned in any works on medicine as a remedy for heart trouble, because it was newly discovered. Also, before anti-toxine was discovered as a cure for diphtheria, it was not mentioned in medical works, but, of course, it was afterwards. It may be that the doctors have not discovered the remedy of bee-sting for the cure of rheumatism, and for this reason it is not mentioned in any of the medical works. I know they have a remedy—at least, I have seen it in the drug store, called Apis Melif—and I understand that it is made out of the bee-sting. It is a homeopathic remedy, I think.

Dr. Bohrer—The homeopathics may have; I am not so familiar with their materia medica as with other schools.

Mr. Stone—I would like to ask the doctor a question. I have known cases of appendicitis, where the doctors would say the patient would get through all right because he didn't have any tobacco or whiskey in his system. Would bee-stings affect one, more or

less, when he didn't have tobacco or whiskey in his system?

Dr. Bohrer—No, I don't think so, so far as my experience and observation are concerned. Whiskey never cured anything. When a man is bitten by a rattlesnake, the question is asked if in taking whiskey it neutralized the poison. No, it does not; it simply is given to sustain the vital force—keep up the heart action until the system can throw it off.

Mr. Crim—I heard of a man one day who was cured of a snake-bite, and the next day he was looking for the snake!

Boards Before Hive Entrances in Winter.

"What do you think about putting boards in front of beehives entrance during a heavy snow-storm, to keep the bees from falling on the snow and perishing?"

Dr. Bohrer—I have never tried it, but have heard it recommended. I put my bees in the cellar.

Mr. Bowen—in regard to that, of course, I have not had the experience some others have, but I have shaded the entrance, and I think we get good results from it; the great trouble is, with snow on the ground and the entrance not shaded, the reflection from the snow makes the hive light, and this induces the bees to come out, because it is seemingly a pleasant day; they come out and drop in the snow, whereas, if the entrance was shaded, it would avoid that reflection, and the bees are not so apt to come out then.

Dr. Bohrer—Something that I have found very annoying is mice getting into the hives.

A Member—I have used a piece of 3-8-inch tin.

Dr. Bohrer—I have used zinc.

President Kildow—Taking a strip of tin, they can pass in and out and carry out the dead bees, but a mouse cannot get in.

Mr. York—I think a wire cloth, 3 mesh to the inch, would be good, fastened at the hive entrance.

Wingless Bees.

"What is the cause of a queen producing so many wingless bees?"

Mr. Dadant—I have seen that, but it was not the fault of the queen, but moths running along between cells,

gnawing their way; I have never seen wingless bees produced in any number.

Mr. Werner—I bought a fine queen last summer; she produced fine bees, but about 7 per cent of the young bees were wingless. Of course, I told the party I bought it of, and I returned it and got another one for it.

President Kildow—Were there any moths in the hive?

Mr. Werner—No, sir; the wings were off from the body.

Dr. Bohrer—I had a case of that kind in my apiary once. It was not due to moths; it was a Caucasian queen; a great many of the bees would come out wingless; others would have wings that seemed to be perfect, but they would drop to the ground when they tried to fly; they could not fly; I pinched the life right out of the queen, and got rid of her. I don't attribute it, particularly, to the Caucasian race of bees. We have the same things happen in the animal kingdom; some animals are monstrosities, and such things happen in insect life as well as to animals.

Removing Propolis From Hands.

"Did any one ever try honey for taking propolis off the hands?"

Dr. Bohrer—I never did.

Mr. York—It is very easily tried.

Mr. Stone—I asked that question. I was handling some broken pieces of comb honey that I had gotten out of the top of the hives, and my hands were just covered with propolis when I began, and when I was done, it was all gone.

Mr. Crim—Coal-oil and corn-meal are the best things in the world to use.

Mr. Stone—Lekko soap will take it off every time.

Adulterated Syrups.

Dr. Bohrer—I will ask another question. It is a matter of importance to the public in general, bee-keepers or not; and that is, so far as your knowledge extends, are you aware, and are the people aware, that very much—in fact, I might say of the syrup that is sold in groceries—about 90 per cent of it is glucose; perhaps 10 per cent is cane. Do you think the people know what they are actually using, and if they don't, they ought to be informed. I inform them of this: I tell our grocers that they are selling something there that is not fit to go

into the human stomach. There is 90 per cent of glucose to 10 per cent of cane syrup. Many people do not know what is causing their indigestion and dyspepsia. It is eating so much glucose syrup.

Glucose Cause of Indigestion.

Indigestion and dyspepsia were not known in the world's history until corn syrup was introduced, and the people don't know to what cause to attribute it. People that are using it right along, and continue to do so for table use, cannot use it five years without contracting the disease in their system; it is not fit to be sold.

Mr. York—I thought it was required by law that all canned foods should be labeled?

Dr. Bohrer—But the people don't read it.

Mr. Moore—You will find almost all of it marked 90 per cent corn syrup; it is not corn syrup; it is glucose. They can make syrup from the corn-stock that is corn syrup, but this glucose is made from the starch of the corn kernel.

Dr. Bohrer—I believe the Government has decided the name is not inappropriate—corn syrup.

Mr. Moore—Dr. Wiley claimed it should be labelled glucose; it was not corn syrup; but it was overruled.

Increasing the Association's Membership.

"What can any member of this Association do to help increase its membership?"

Mr. Moore—Simply talk it up.

Mr. York—It does seem to me that is a fair question, because, if Illinois is going to stand at the head of the list of organized bee-keepers' associations, we ought all to find out just what we can do to have the largest membership; and, then, too, I think a large membership in our State organization would help to secure the legislation we want to get, at another term of the Legislature. I, for one, would like to know what I can do to help. I have tried to do what I could in years gone by, because I believed in bee-keepers organizing; I believe they are very likely to get what they want if they are properly organized, and I think a great many bee-keepers

would become members of this Association, as well as of the National, if they understood it would be a real benefit to them. It seems to me there ought to be enough wisdom in this meeting to devise some plan, so that we may get out and work next year before the meeting of the Legislature. I would like to hear from Mr. Stone, as to whether it would be an advantage to have a large membership in trying to secure the laws we want.

Mr. Stone—Yes, indeed; that is one question they generally put to us: "What is the membership of your Association?" and we can turn around and answer them: "It is the largest of any bee-keepers' association in the United States, except the National."

Mr. York—The National has about 3,500 members.

Mr. Stone—Mr. France says that our State Association sends them more memberships than any other State, and Illinois stands ahead in the National, of any other State in the Union. We are doing pretty well now, but we are not going to be satisfied until we have departed from this earth. And, Mr. President, I will just state here (you might have gotten it from my report, if you had read between the lines), we send out, each year, a thousand letters, soliciting membership, and Mr. York has given us valuable assistance.

But, as I have said before, I do not feel any anxiety about the Association ever going backward, because of the discouraging year, and this year has been very discouraging; but it didn't reduce our list any, but increased it, though it was increased before the honey season came on. What the effect of this poor year on our coming year's membership will be, is questionable, but I don't believe it will reduce it at all. Since the National began to give us membership in that, with our dollar, sending one-half to the National and getting a membership in that way, every bee-keeper that is informed wants membership in the National. And when he can get it in our State Association, and get our report and in the National at the same time (and our report includes the report of the National); all of that for \$1.00. And if he joins the National, not in a body, he will have to pay a dollar, and just get the National report; but now,

when he pays \$1.00 in the State Association, he gets the National report and ours, and the Northwestern (they are all published in the same report)—all this is an incentive to get membership in our Association. If a bee-keeper goes into it once, if he thinks anything of his profession, he is not going to drop out of it; he can't afford to. I do not feel any anxiety about it. We should all do like Mr. Werner does. Some man at the Fair asked him a question, and he replied that he could not answer that question unless he was a member of the Association. He sent three men to me at the Fair, that way. If we all did as he does, our Association would have one thousand members.

Dr. Bohrer—An increase in membership is what I and all of us ought to wish to see, and I believe it is on the increase. I was one of the first readers of the American Bee Journal; Samuel Wagner began its publication, and he suspended it for a while; it has been alive ever since. I am satisfied there is a great deal more bee literature read through the length and breadth of the land than there ever was before. We should try to have our colleges take up the subject of bee-keeping; they should have it in the schools; get after the professors of your institutions and the superintendents of public instruction; tell them it is important that they take up the subject. The time is coming when it will be done; when these things will be taught in our universities and other institutions. The people do not know of the possibilities of bee-keeping—only a very few of them; they have to be educated in this. Gradually it will come to the front. Let us talk to the teachers in our educational institutions, and the educational institutions of the State, and to our representatives, and tell them what should be done; that we want the people educated in these industrial pursuits. In Germany bee-keeping is taught in the common schools, and many of the Germans know about the management of bees. There they are taking advantage of it; this industry is gradually being pushed all over Europe. In Pennsylvania I notice they have Field Day Exhibitions, and lessons given to the young men and women of the country. They don't think it beneath their dignity to go out and take lessons.

I introduced perhaps the first Italian queen ever introduced in the State of Indiana. I was then a practicing physician. When the people found I had sent a ten dollar bill to Mr. Langstroth for a queen, they did not know what to make of it. I went on, though, and introduced that queen, and in about six weeks I had built up a good colony, and asked the people to look at it. They said, "See what that fellow has done;" and they said I had manufactured the bees! What knowledge the people get about bees and bee-keeping you have literally got to pound into them, and keep pounding it; it is an industry that people, generally, don't take to.

Mr. Bowen—I believe the question is, How we can best increase our membership? I think one thing that would make it interesting would be to put ourselves in position to go before the legislature and get the laws we want; and in order to do that we should have a Legislative Committee appointed, consisting of a dozen or fifteen; they should organize and thoroughly canvass the State; send out literature, and get what information we can get from Mr. York and others who have lists of bee-keepers throughout the State. We ought to find one or more in each county, and interest them in circulating a petition to the Legislature in regard to our foul brood law; that will interest others; that will make inquiries in regard to the Association, and the first thing you know we will be getting names from those sources for our State Bee-keepers Association.

Right down at Jacksonville a party telephoned the other day to know something about the State Bee-keepers Association, and he said, "I want to join it." A lot of men know nothing about the Association. That is one way, by getting out in each county, and have a petition circulated there by one or more men, getting names on the petition; those men who sign their names are going to become interested, and in this way I feel sure we will get good results. Any move we can make in that direction will be a benefit.

Mr. York—I don't want to talk too often, because you know some people talk a good deal and haven't said anything when they get through. But this certainly is a live question. Mr. Stone said awhile ago he didn't think the

Association would go back any; I don't believe it will; bee-keepers are not very easily discouraged. I think this is the best attendance we have ever had at a State Convention, to start with, and I think we are having about the best meeting we have ever had in Springfield that I know anything about. I don't think bee-keepers are going backward. I have visited practically all of the bee supply dealers in this country, within the past three or four weeks, and they all tell me they have had the largest demand for bee-keepers' supplies this year; that it has been the best year they have ever had. I don't think Mr. Dadant is discouraged at all, because I think he had probably the largest comb foundation sales the past year that he has had. G. B. Lewis Co., while they were burned out last June, will build a bigger place than ever. The A. I. Root Co. is spreading out—fifteen acres!

I simply give these to show you that those people still have faith in the bee business, or they would not spread out in the way they have. I believe the bee-keeping business has only just begun. I am surprised at Dr. Bohrer; think of the enthusiasm he has manifested; I don't think he was ever so enthused before over bee-keeping as he is today. He attends many conventions. I think we ought to try to get a thousand members in this Association next year. How to do it is the question. Here is one way:

We want to get up a monstrous petition to present to the next Legislature. Let us print such a petition and mail it to all bee-keepers we have in this State, and ask them not only to sign it themselves, but to get their neighbor bee-keepers to sign. You can present just as many petitions as you want to the Legislature. Have a number of petitions signed. Send out a thousand or fifteen hundred petitions to bee-keepers in this State, and ask them to get their neighbors, also, to sign the petition, and at the same time, ask them to join this Association. I don't think I have done very much. I have tried to help this organization, but I believe we can do better the coming year.

Here is Mr. Werner; see what he has been able to do; he has been able to get members for this Association; he is not afraid to ask people to join, and

he does ask them. I believe we can get one thousand members in the next year, and then we will get our law. As the Secretary said, "There are more for us than are against us." I don't think there are more than twenty-five bee-keepers in this State that are against the law that is needed, and if they understood it properly, they would see how foolish it is to stand out against it. There are thirty-five thousand bee-keepers in this State, so the census says.

I am ready to do my part; maybe I can help, because I have the American Bee Journal back of me, and I know the more I do for this Association, so much the more will it help the National. I think that was a great plan that was adopted, that \$1.00 should cover the membership in the two Associations; it helps us both. What we want to do is to push for members! Have a large Legislative Committee appointed, of twelve or fifteen members, and get together and lay out a plan, and we will not only get a big petition to present to the next Legislature, but also a lot more members for this State Association.

Mr. Bowen—I would like to inquire if it is the intention to meet again tonight?

Mr. Stone—They seemed to veto that.

Mr. York—If we are not going to have a session tomorrow afternoon, we might as well have one tonight.

A Member—I think we ought to get through by tomorrow noon, for the reason that since I have been coming here to conventions, there has been very little to do in the afternoon.

Mr. Pyles—I move that a committee of 12 be appointed, a Legislative Committee, to take up the consideration of a foul brood law, and the matter of bringing it before the Legislative Assembly.

Mr. Stone—Would it not be well to postpone that another year? The Legislature does not meet next winter.

Mr. Bowen—That is where the trouble has been. We have been postponing too much already.

Mr. Stone—Work a year at it?

Mr. Bowen—Yes, get ready now.

The motion was seconded.

Mr. Stone—Was the chair to appoint the committee?

Mr. Moore—I would ask if there is anything in our Constitution and By-Laws in regard to the Legislative Committee?

Mr. Stone—The Constitution and By-Laws provide that the President, the Secretary and the Treasurer are the Executive Committee. It does not say how such a committee shall be appointed.

President Kildow—It has been moved, seconded, and carried, that we proceed now. How will we do? Will we each write down twelve names?

Mr. Pyles—Each write one name, and take the one who has the largest number of votes.

Mr. Bowen—We vote for all of them at once. Take the ballot now, and let the tellers report as soon as they can.

Mr. York—Report tomorrow morning.

Mr. Stone—The chairman should appoint two tellers.

President Kildow—I will appoint Mr. Bowen and Mr. Dadant as tellers.

Mr. York—I would suggest that we write just the last name—no initial, because there are no two by the same name. Put twelve names on the ballot.

A Member—This order of election strikes me very peculiarly. I knew nobody here until today. I know a little something about politics. This committee should be composed of men who have influence with the Senate and House of Representatives. We can elect, on this committee, twelve of the men who are here in this convention today; but I might have a little influence up in the northern part of the State, but what good could I do here? What influence would I have here among your representatives?

Mr. Dadant—The men who come here to attend these conventions are generally the men who are interested; you may have a friend who is interested. If you are not, yourself, acquainted here, you may have some friend through whom you could work; you could tell him that you wanted his help. It is much better to appoint a committee from the men who are here, than to appoint some one who, possibly, would throw the paper in the waste basket if you wrote to him and told him he was appointed.

Mr. Bowen—It looks to me as though

we should postpone this election until tomorrow morning. I move that we reconsider the action of the convention in taking this vote at this time.

Mr. York—I second the motion.

The motion was carried, to reconsider.

Mr. Bowen—I move that we fix the time of putting in our ballots the first thing in the morning, at the opening session.

Mr. York—Don't you think it would be a good idea to have a Nominating Committee, and have this committee select for nomination, a foul brood inspector and the officers of this convention; say, have a committee of five, to report at ten o'clock tomorrow morning?

Mr. Bowen—I am opposed to that. It looks to me like a wheel within a wheel. Take the names and consider the location, and if we want to know about them, we can ask Mr. Stone; he knows all of them, and we can hand in an intelligent ballot.

Mr. Dadant—I object to any Nomination Committee, especially for inspector.

President Kildow—You have heard the motion to fix our ballots and put them in at the opening session. All in favor, etc.

The motion was put, and carried.

Mr. York—I move that we adjourn until 7:30 this evening.

The motion was put, and carried.

————— EVENING SESSION.

The convention met at 7:30 p. m., with President Kildow in the chair.

Mr. Stone—Dr. Bohrer made a statement about the study of bee-keeping getting into the universities. I just want to say a little on that. We have been called upon for our reports, to go to the different libraries; one at Albany, N. Y., has asked for our reports, and one at Washington, and several others; I can't name them all. Last week I got a request from the University of Illinois, at Urbana, for the reports; they asked for all the numbers, and it was that I spoke of in my report this morning. In looking up the matter. I thought I was going to fail to find a copy of the Third Annual Report, but I finally found a bundle. In the letter that I received from the librarian at Champaign, or Urbana,

Ills., he says: "Enter our request on your mailing list for all copies that are issued hereafter, and send us all you can; all you have on hand. They will be very fine for the graduating class, in their research for literature along that line." He spoke of their being very valuable. That shows they are beginning to investigate things along this line, as well as others.

Mr. York—I was at Columbus, Ohio, last July, on the State University grounds, and I found there about thirty colonies of bees. So they are making a study of bee-culture there, also. During the winter course, a short course in agriculture, they have a lecturer come to talk to the students, giving them several lectures during the winter on bees and bee-keeping. It seems they are getting interested at our own University at Urbana. I think it is about time our own State University is getting busy.

Dr. Bohrer—They are also getting busy in Kansas, too.

Mr. Dadant—We are still on the question of the growth of our Association. I guess I am probably one of those who came to the first meetings that were held here. For four, five or six years it was almost impossible to get more than half a dozen bee-keepers to come. I came here when there were only four people. Mr. Stone, I think, was one of the men who was here. I think there are only three or four of us here now that came then. If it had not been for Colonel Mills, I don't know whether we would have grown much. Colonel Mills suggested to us that the only way for an association to become permanent was to organize—to be incorporated, and to get a charter, and he joined us; he put his own name on the list; he never was a bee-keeper. He joined us simply to help us incorporate. He said then we would be a body, and that then we could do something; that the only way to accomplish things was in organization; that we could then petition the Legislature. And you see we have grown, and I don't think we will ever go backward. I think our future is as much toward growth as our past is from nothing.

Mr. Stone—I have passed the years of anxiety. I used to be anxious all the time.

Mr. Pyles—Three years ago this month was my first attendance at the convention, and, if I remember right, we got here along about noon, and met with the second session; we met and organized committees in the morning, for the first hour after we met. There was but seven in the room the second session. It looks to me as if we have grown some.

Mr. Stone—We have had a number of meetings when we just about got nine fees on to our list; but the work of getting the members comes after. There has hardly a month passed but what we got from one to a dozen members; they are coming in all the time. My book will show now that two or three have paid for 1910. Their fees are not counted in our statistics in our financial report; they will be counted next year.

Bee-Keeping in the Schools.

Mr. Moore—While we are talking on this subject of education, I think a great many of us are so situated we can do something along that line. Take it in the public schools, and in the High schools, particularly: they are advocating more time and attention to outdoor studies of animal life and insect life, and, by talking the matter up, we could get a chance to demonstrate before the pupils, and give them lectures and talks on bee-culture that will help them out wonderfully; and the teachers and the principals are very glad to receive such help, generally. Not long ago I was talking with a principal of our high school; the children were getting specimens of various insects. I happened to find a seventeen-year locust on the sidewalk, and gave it to one of the girls in this class, as a specimen. I spoke to the principal about bee-culture; he knew that I was in the business, and he said he would like to have me come and give them a talk, and demonstrate the working of the bees. So I took an observation hive right into the schoolroom, and gave them a lecture on the subject of bees and bee-culture. I think, if more of us would do something of that sort, we could accomplish a great deal in educating the people in this line. If you take an observation hive right into the schoolroom, and talk to the children, you will find that the knowledge you give them will be pretty well dis-

seminated. It will create a demand for honey, and stimulate the interest of every one in bees.

Mr. York—I may say that I have done that. I did a little along that line in the Chicago schools during the past summer vacation. I was invited to bring some live bees to one of the vacation schools. I gave them three or four talks. They would fill the room up with children, and then those would pass out, and another lot would come in; and so I kept it up for about three hours. I also have 75 or 80 stereopticon slides, that take an hour, or an hour and a half, to run through. Next Tuesday night I expect to deliver a bee lecture before the Y. M. C. A., of our suburb. I have given this lecture, and it seems to take with the people, especially if you can show them pictures on the screen. I would be glad to use them more, if I had an opportunity—an evening a week, perhaps, in different parts of Chicago, that I could reach in an evening. I think it is a good thing.

Mr. Coppin—In order to make up a collection of insects, I always give the children queens, drones and workers; that will help to make a display.

Beeswax and Butter.

"Is it not true that beeswax is in the honey, the same as butter is in milk?"

Mr. Moore—I should say not.

Mr. Coppin—The honey is in the wax, instead of the wax in the honey.

Mr. Moore—I think that has been demonstrated by scientists—wax is a secretion of the bees.

Mr. Moore—I have had people ask me if those bunches of stuff bees had on their legs was wax.

Mr. Stone—Is not beeswax in all honey?

Mr. Dadant—Beeswax is in sugar, when you come to that.

Mr. Moore—The bee has to eat honey and digest it, to stimulate those glands to secrete the wax.

Dr. Bohrer—This stands in about the relation that blood stands to corn or bread. There is blood in bread—in corn bread—in any of the digestible food that we eat, and it is what the bees eat that enables them to secrete wax; but you will never find wax in globules in honey, not as you find globules of butter in milk. We have

never seen any such revelations by the microscope.

Rendering Combs Into Wax.

"What is the best way of rendering old brood-combs into wax, where a person has from 150 to 200 hives of foul broody combs? Who knows anything about the Hershisser wax-press?"

Mr. Dadant—The old combs—I don't care whether foul broody combs or not, if you don't leave them where the bees can get at them—the old combs, in order to get the most beeswax, should first be soaked, and they should be crushed, because, if you melt combs when they are not crushed, there is a chance of wax lodging in the cells. The cells are very heavy; the skins of the larvae that are left, one after another, in the cell, make little tubes, and when you melt those combs, those little tubes are still in existence. If any wax lodges in there, it is difficult to get them out; if you crush the combs, you destroy those things, and if you soak the combs, it will wet the wax so it will not stick to any of those particles. By wetting the combs, you have the advantage of taking a great deal of color out; you will find that out if you soak the combs for from twenty-four to forty-eight hours; the water is of a brownish color. After the broken combs have been soaked, melt them; you can melt them in a kettle and dip out the beeswax from the top—take all the wax and then purify it again the second time. But if you can afford the Hershisser press, it is certainly the best, to my knowledge, and I believe those who have tried it, have found it good. The Hershisser press is made on a rational principle. When you have a large, round press in which you put a considerable quantity of old combs, the wax in the center will come out with difficulty, after it has been pressed quite tight, because it is imprisoned in there; but if your wax is put in a press like the Hershisser, it is in layers—a full layer, then a spacing frame; another layer, another space, and so on until the top; your layers of beeswax are from an inch to an inch and a half in thickness, and when you press, you have all of those spaces through which the liquid wax can escape; and for that reason it is very much better. The residue that

other presses would leave in such a manner that never could be extracted, would still furnish some wax, with the Hershisser press. We have used one now, I think, for two seasons, and it has been used very hard, but it has done a great deal of work. It is expensive, but it is good.

Mr. York—It costs \$18.00.

Mr. Stone—Is it not a fact that Mr. Hershisser sends all over the country and gathers up the old refuse that has gone through other presses?

Mr. Dadant—Yes. I suppose you know, we have had a good deal of experience with residues, they are worse than beeswax in the old comb. Take our residue, and we have rags and sticks of wood; in fact, anything you please, that would stick to beeswax; and when we come to the last pressing of our residue, we have a little press made of steam coils, about the size of a cider press—1½ feet in diameter; we have a steam coil going around that, and we put our wax in and turn on the steam to keep it at a boiling heat all the time, and press it, and we get very black stuff out of the residue; but it is wax. We find the same trouble with that as with other presses, the center does not run out very good. If any of you have any of the German wax-presses, bear in mind that, in order to succeed in getting the most wax out, you must not hurry it. It is just like pressing grapes to make wine; if you hurry it, you imprison the center in such a tight way that the wax can't get out; press a little and then let it leak; then press a little more, and the liquid in the center will not be imprisoned; but if you go too fast, you are going to get the thing too tight, and some liquid will be in the center, you cannot get out; give it plenty of time. I can only see one improvement possible in the Hershisser press; that would be, to have those layers on edge, instead of horizontal; for the reason that the wax that is under will less readily escape. I have thought several times of designing something that would be an improvement on the Hershisser press.

The Solar Wax-Extractor.

"Would you advise the use of the solar wax-extractor in rendering up foul brood combs?"

Mr. Dadant—No. In the first place,

the solar wax-extractor is very slow. I think it is a good thing for bits of wax you have during the summer season, a little wax you gather and don't know what to do with—throw it in the solar extractor; but not to use it for large quantities of wax. We think the solar extractor is useful for small quantities of wax.

Mr. Becker—I want to tell you one way to get the wax out of old combs—for those that haven't two hundred colonies, but have about fifty or sixty.

Three years ago I lost, one winter, about forty colonies, and I saw that I could not save the combs, so many of them had bee-bread in them; those that had no bee-bread, I put them away and saved for the bees, and the others I cut out and put in a big box—I had two boxes full. They set out in the open for a long time, until they got well soaked, or rained on. Finally, I concluded one day I would melt those combs down. I got a kettle ready and went to work on them, and I saw I had trouble in hand. I happened to be down to the postoffice, and I said to one of my neighbors: "If I only had a beeswax press now, I would like it;" that I would like to buy one, but I never got it. I said to him: "I don't know how I am going to get those combs pressed out." He asked me if I had ever used a lard press. I had a lard press, and I went home and went to work. I got out the lard press; got a couple of small gunny sacks, and put in a gallon of combs; put them down into the hot water in my kettle; got another sack and filled it, and got it soft, and put it in the press. It worked the same as other presses; and, by myself, in two hours, I had extracted sixty pounds of beeswax out of those combs. If you have only a small number of colonies, that is, between five and seventy-five; if you have lots of old combs, just get a lard press; it costs you only about a quarter of what one of those big presses cost, and you can press out every bit of wax in it. Of course, old combs I put back a second time, after pressing out all I could at first, I put it back again into hot water and let it boil once more; get it all good and hot again, and put it back in the press. I first pour hot water in my press, so that the press gets good and hot, and then I put in the wax. After

you are through with it, if you want to use it for lard, you can take a clean rag and wipe it out, and it wipes right out, and your press is ready for lard. That is the way I did my extracting.

Mr. Stone—You will run the other presses out of the market!

Mr. Dadant—I always like to figure on what things cost. If the press costs \$18.00, interest, at 6 per cent, would be \$1.08 a year. I am satisfied that if you have only fifty colonies of bees, you have saved \$1.08 from that press over the one Mr. Becker recommends, by buying the Hershiser press. I am satisfied he leaves that much wax in his combs. We have seen stuff look as though there was no beeswax in it, and we would produce quite a little from it, when pressed right.

Mr. Stone—I believe it is a good deal like the cider press. A man came to our house to get some apples to make some cider; he had been told that eight bushels of apples (Jonathans) would make a barrel of cider, so he thought he would get twelve, and be on the safe side. I afterwards inquired of him how many bushels of apples it took, and he said he lacked about ten bushels of making a barrel; I asked him what the trouble was. I knew of a man who got a barrel of cider out of twelve and a half bushels of Ben Davis apples, and they were not considered as good as Jonathans. I believe the reason he did not have better success was because he run the press down too quick, and left the cider in the middle. That is the way beeswax is left in the middle of the comb; it does not come out, but the Hershiser press will bring it out.

Reports of Committees.

Mr. Moore—The Auditing Committee is ready to report. It found the reports all correct, with one exception. Mr. Stone had turned over to Mr. Becker \$64.00 that he included in his last year's report. Mr. Becker had carried it on in this year's, so he reported a balance of \$1,438.38, but that \$64.00 should come out of that; his balance really was \$1,374.38. He reported \$64.00 too much. With that exception, everything is straight.

President Kildow—You have heard the report. What will you do with it?



J. Q. SMITH,

Late President of the Illinois State Bee Keepers' Association.

Its adoption was moved, voted upon, and carried.

Mr. Dadant—The Committee on Resolutions has two resolutions to report to the members, if you are ready.

Resolutions regarding the late President, Mr. J. Q. Smith, were read, and adopted:

Whereas, Our late Worthy President, J. Q. Smith, departed this life on October 9, 1909; be it

Resolved, That we deplore the loss of a man who has rendered great services to bee-culture, both as President of the Illinois State Bee-Keepers' Association, and also as State Inspector of Foul Brood. That we instruct our Secretary to enter this resolution upon the records of the Association, and to send a copy of it to his wife and children.

C. P. Dadant,
J. W. Bowen,
W. H. Hyde,
Committee.

On motion, a vote of thanks was extended to Mr. George W. York for

permitting the use of his lists to spread literature among the bee-keepers of Illinois.

Mr. York—I appreciate very much this resolution. Lest I should forget it tomorrow, I want now to extend a hearty invitation to this whole convention to attend the meeting in Chicago, of the Chicago-Northwestern, the first and second days of December, to be held at the Briggs House. We are going to try to have a great meeting; quite a number of bee-keepers have promised to be present, Dr. Miller among them, and I know you will all like to see him. We would like to have all present who are here, and as many other bee-keepers of the State as it is possible to attend.

Resolution.

Whereas, The room given to bee-culture by the State Agricultural Board is entirely inadequate for the present needs of our growing pursuit; be it

Resolved, That we join the State Horticultural Society in requesting the

State Board of Agriculture to erect a larger and more commodious building for these two closely allied industries in their annual exhibits.

C. P. Dadant,
J. W. Bowen,
W. H. Hyde,
Committee.

On motion, the foregoing was adopted.

Revising the Premium List.

Mr. Dadant—I have a resolution in regard to the premium list. The Secretary, in his report, said the premium list had some wordings in it that needed changing. (The resolution was read, and, upon motion, it was adopted seriatim, and placed with the Secretary, as a part of this report.)

Mr. Stone—I want to say to the Association, this premium list (I worded myself), and I came near being beaten at the Fair, because of the letter "S." The other fellow got beaten because he had only a single design, and I happened to have more than one design, and didn't get beaten. Now, in getting up that list, we put it in the plural number, because we supposed where there were three or four designs, one would get the first, one the second, and one the third; we didn't think each man would be required to have two designs. That "s" just happened there.

Like we put it, "Honey Extracted on the Ground," and the first thing we knew there were men, that came there with 500 pounds of honey that claimed to be extracted on the ground, when it was not. Our object was to make it educational, and have the honey actually extracted on the ground. It is not educational where they bring it on the ground already extracted, so we changed it to read, "Honey Extracting on the Ground."

I think that the letter "s" should be taken off from the word "designs" of beeswax—to make it singular number.

Mr. Coppin—I fail to see how those two jars of comb honey could have been awarded the first premium as being designs, in preference to the letters that were built by the bees, in honey, "Illinois State Fair," and the words, "In God We Trust." The judge gave the blue ribbon to a man, because he said: "This man hasn't got any ribbon at all." He did not do it be-

cause of the design, but because he took pity on him.

Mr. Dadant—Perhaps it would be as well to have a vote on each of these sections separately. First, we might consider the matter of the letter "s" in the designs on beeswax, making it read "design."

Mr. Stone—I want to say this list now has been going on for four or five years this way, and it occurred two or three years ago that this premium was wrongly awarded to an Indiana man, that had just two nicely shaped bottles, like you see in any druggist's window. The first globe was one color, and the other another color. He had two of those bottles, and they were filled with honey. Mr. Coppin never knew until this year why he failed to get the premium, and Mrs. Coppin cried over it; we all sympathized with her.

Mr. York—Were not those same things there a year ago?

Mr. Stone—Mr. Coppin had two or three designs. He had "In God We Trust" and his own name, worked out in letters, by the bees.

Mr. York—I certainly gave him the premium on it, as I was the judge.

Mr. Stone—The other fellow didn't. I got onto it in this way: Mr. Becker said to me, "Who are we going to have for judge this year?" I told him that the Superintendent told me it was going to be Mr., and he said, "Well, his decisions have been satisfactory." I referred him to the decision he had made that was not satisfactory, and Mr. Becker said, "Don't you know why he ruled that way? Because there were two designs."

Mr. Becker—A little explanation may be well from me on that. The judge came around to my exhibit, and I supposed, like Mr. Stone and the rest, that we were simply to furnish a design. He said to me, "Where are your designs?" And I replied, "There it is—the Honey-House." He said, "You must have more than one design." That was the first time we ever had noticed it being "designs." As to the Indiana man getting the premium over Mr. Coppin, Judge Blank's only explanation was, "The poor fellow ought to have something."

Mr. Dadant—In this matter you want to have everything so explicit that a

judge cannot get around it without making a downright, square injustice. I expect he can do that anyway, if he has a mind to, but the idea for us here tonight is to word the thing so that the exhibitors themselves, and the judges present, will feel there is no chance of making a mistake. I would take each one of those premiums separately, and pass upon them; some of you may have objection to some one clause; if you are all of a mind, it will be quickly done. Take the words, "Display of Designs in Beeswax." To tell you the truth, if I saw one big design, and it was far better than half a dozen little ones, I would give that the premium.

Mr. Pyles—I move the Secretary read these premiums one at a time, and action be taken on them.

Motion seconded, and carried.

1st. A Full Colony of Bees of any Race—in Observatory Hive—\$5.00, \$3.00, \$2.00.

Mr. Becker—What is the premium to be on—the hive, on the bees, or on the comb? If it is on the comb, should it be filled combs, half combs, or quarter combs? What is the premium to be on?

Mr. Dadant—If there were four or five exhibitors, and one of them had a good colony, in good shape, I think I would give that one the premium. If others were only part of colonies, that should be taken into consideration.

Mr. Werner—I think it ought to be a full colony, in working order.

Carried.

2d. Carried, that the words, "with queen," should be added to numbers 2404, 2405, 2406 of the above named premium list.

That an addition should also be made to the list, as follows: One Frame Observatory Hive, of Caucasian, with queen, \$4.00, \$3.00, and \$2.00.

A Member—I would amend that by making it, one nucleus hive, same as Golden, Italian, Carniolan, and Leather Colored.

Mr. Dadant—We made it read exactly as on the paper.

The motion was seconded, carried, and adopted.

Mr. Stone—That No. 2400, on extracting honey on the grounds, read: "Honey extracted on the grounds, execution and explanation considered." (Adopted.)

That No. 2408 read: "Display of design in comb honey executed by the bees under the control of the apiarist."

Mr. York—Why the word "display"? Why not simply say "design?"

Mr. Dadant—The word is "display" in both cases.

Mr. York—Everything is on display; I should think it would be simply "design." I move to take out "display of" in both places. (Carried.)

That the letter "s" be removed from the word "designs" in Premium 2409.

Mr. Dadant—We will have to change that if we want to take out the words "display of."

That Premium 2409 should read, "Design in Beeswax."

Mr. York—Do you mean to have just one design in beeswax from one exhibitor? Heretofore nearly every exhibitor had a number of things made of beeswax.

Mr. Stone—The premium should be on "design" in beeswax.

Mr. Dadant—At the World's Fair we had one design that cost us three weeks of labor, and if somebody had had three designs, under this ruling, it would have beaten us.

Mr. Becker—It doesn't look to me as if you have got this really right; you exhibit just one article and nothing else. It seems to me that the Bee-Keepers' Association doesn't tell a man what he shall exhibit; he should know what he can get a premium on and what he can't. If he wants to make a half dozen designs, he should have the privilege. If one man's exhibit is considered better than another, he should get the premium.

Mr. Dadant—I move that we change the wording to "Design or Designs in Beeswax."

Mr. Pyles—If you wish to offer a premium for the best horse, you would not hinder a man from exhibiting just as many horses as he wanted to, not only one horse; but, of course, the one horse that is the best would get the premium. One design in beeswax, if the best, will get the premium, although you may have a dozen.

President Kildow—I think the explanation Mr. Pyle gives is all right. We may have four, five, or more; we may have three good ones, and one would be considered better than the others; we get the premium only on design, after all.

Mr. Dadant—I think that is a mistake. I don't think a man can make two entries on one premium. If he can't make more than one exhibit, he will certainly select his best piece. If there are two designs, and the judge hesitates between the two, he will give the premium to the one who has the better.

Mr. Stone—Now, this is just exactly like the design in honey. The controversy came up because the man did not have two designs in honey; the other fellow, an inferior exhibit, got the first premium because he had two bottles of honey. It is the same with beeswax, exactly, and if you make a change in one you have to make it in the other; and if you make a change in the other, why not go back and modify the whole premium list? Take it in the case of white clover honey, 12 to 24 pounds. A man could exhibit 500 pounds, if he wants to, on that. He has to have so much, and if he has ten times as much, if everything else is equal with the man who has a single case of honey, he would be apt to get the premium. It is the same with design in beeswax and honey. If the man had the best, who had a single design, he would probably get it; but if another man had several pieces, but not as good, he would not be apt to get it because he had more. I can't see any way of crawling out of that.

Mr. Coppin—It seems to me there is a little mistake there. If the premium list called for a sample of twelve bottles, the judge would certainly give the exhibitor the full score for twelve bottles; if the display is for a weight of 500 pounds, that will be given the full score. The other man might have a thousand pounds, but he would not get any more recognition on this account.

Mr. Stone—If the man who had the larger quantity was equally as good as the other, he would be apt to get it.

Mr. Coppin—Does it not say, 500 pounds will get the full score, on the premium list?

Mr. Stone—The score card reads, 500 pounds shall score for quantity; it does not say anything about quality. It takes 500 pounds to score for quantity, and if the man has 500 pounds, he would score full point; but if the other man had more equally good in

all respects, he would score a little more; it would weigh with the judge.

Mr. Becker—It says 500 pounds only will receive full score; that does not mean 600, or 700, or 800.

Mr. Dadant—I would understand that to mean not less than 500. Any one who was judge, if he saw two exhibitors, one with 1,000 pounds, and one with 500, and he hesitated between the two, he would turn it over to the man who had 1,000. Of course, if the honey of the one who had the 500 pounds was better than the one who had 1,000, that would be a different matter.

But we are discussing honey, and the question is beeswax. Some one has said that if you make up several designs in beeswax, one party is entitled to but one premium; that you cannot get a first, second and third premium. I think if what a man exhibits is entitled to it, he should have it. For instance: Here comes in a man with three designs in beeswax, each good. If a man goes to work and takes the time and the expense of making up three nice designs, and any one of them is better than that of other exhibitors, I think he should have the first, second and third premium.

Mr. Becker—If you will look back, I think you will see that those 500 pounds were put in there for a purpose. You will remember very well when a certain man from Indiana got the premium on about 100 pounds of honey; another man from Iowa was there with 500 or 600 pounds. When we got up the premium list we meant to make the Fair Association of the State of Illinois a fine exhibit, and we can make a finer exhibit with 500 pounds of honey than we can with 100; and so, all the way through, with your beeswax. If you have a fine display of beeswax, it is attractive to the people, to the Association, and to everybody. Why, then, will you go and cut it down, and set it down to one thing alone? I say, make as many designs as you desire to, and if the other man's one design is better than all of these others, give him the premium. I don't believe it is justice to cut a man down, and say you can make but one design.

Mr. Stone—It does not read that way; it does not hinder a man from making a dozen designs.

Mr. Becker—I would make it “design or designs.”

Mr. Pyles—If you take twenty horses to the fair, and there is only one premium, the best horse will get it. So will the best design get it.

Mr. York—I was trying to think back to the last judging I did here at the State Fair. It seems to me Mr. Stone had two designs in beeswax. One was a fence around an exhibit—gas pipe fence—and the other one was Uncle Sam chained to a saloon. It does not seem to me I would give Mr. Stone two premiums on “designs in beeswax,” and leave out the other fellow. It would hardly be fair to give one man all three premiums. You might as well say “design or designs;” a man could not enter if he had only one design, if you say “designs.”

A Member—Is it not a common thing, that one man gets first, second and third premiums on horses, cows, chickens, and the like? Don't that often happen?

Mr. York—Different entries, though.

A Member—It seems to me I have seen them get first, second and third, because they had the first, second and third best in that particular line.

Mr. Stone—Only one entry will be allowed each exhibitor for any one premium; that is at the head of our list.

Mr. York—One design would not compete at all, if you say only “designs.”

Mr. Stone—My son worked two or three weeks on Lincoln's Monument, in beeswax, and three weeks on the Log Chain—about twenty feet long. Both he and his wife worked until midnight two nights.

Mr. Coppin—It seems to me if it were put “design or designs,” it would give them the privilege of making one large article, or a number of small articles, and I would make a motion to that effect—that you put it “design or designs.”

Mr. Pyles—The Secretary just read that more than one design could not be entered—only one entry of each article.

Mr. Stone—Suppose that Mr. Coppin had a design in beeswax, or five or six of them; and Mr. Becker had five or six designs—don't you suppose the judge would pick out the best one of each of them and pass on them?

There is no reasonable man that would think they would just bunch the whole thing together, and pass on them.

Mr. Dadant—I believe if the judge had several articles under his eyes, and he knew they were all under one entry, he would take that under consideration. I second the motion to make it “design or designs.”

Mr. Bowen—I am opposed to the amendment. I think the word “design” can cover the point. You can get a premium only on one design; it does not make any difference if you have a dozen designs; you get the premium only on your design.

Mr. Stone—I shall vote against that amendment, because it will make it more confusing than it ever was. The judges will get mixed up worse than we are on it.

Mr. York—Not the way I look at it now.

Mr. Dadant—If I was judge, and it was “design or designs,” I would say if any one design is better than the other, I would give it to the one that was the better; and if there were a number of designs, and any one design was the better, I would give it to that one.

A vote being taken, the amendment carried—“Design or Designs in Beeswax.”

Mr. Stone—How much better is that than the “Design in honey?”

On motion, the convention adjourned until the next morning at 9 o'clock.

SECOND DAY.

The convention met at 9:30 a. m., with President Kildow in chair.

Mr. York read a paper on:

Honey—Its Marketing and Staple Use.

To some bee-keepers the word “honey” is almost a new one, so far as the honey season of 1909 was concerned. A few not only harvested no honey at all, but even had to feed their bees; or else what their bees did store was honey-dew, which, in some instances, was but little better than no honey at all, and in other cases worse than none, especially for the bees' winter stores.

But as the good honey seasons have been in the past, so they will be again in the future. About 20 years ago

there was considerable said about the then poor and discouraging honey seasons, many bee-keepers even wondering if the good honey crops of the early '80s would ever be repeated. But it was not so very long until the good old seasons came again, and with increased amounts of honey, so that the crops of 1903, 1906 and 1908 were even more abundant than those of the former bounteous years.

While, of course, there will be little or no difficulty experienced in disposing of the honey crop this year, very likely another large crop will soon be here, and the question of marketing it will be up for consideration again. In the meantime, it may be well to look at some of the present most successful methods of disposing of honey.

Perhaps the bulk of the honey crop each year is sent to the large city markets—sold wholesale. This is, of course, the easiest way to sell, but not always the most profitable to the producer. And yet, for the most extensive producers it is the best way, for such can not hope to work up a demand at home sufficiently large to take all the honey produced in their immediate locality.

But all who ship or sell wholesale should be exceedingly careful with whom they deal. There are commission men who handle all kinds of produce, and such do not know best how to dispose of honey. They seem to think that any old price will do for honey, so long as they get their commission on the sales they make. And thus, often the market is ruined almost before much honey has begun to be shipped.

In nearly every large city there are now commission men, or dealers, who make a specialty of honey. They have developed a line of customers to whom they can sell honey right along, year after year. Such dealers can usually realize much better prices for the producer than can the ones who know little about honey.

Every bee-paper publisher knows pretty well who are the reliable and best wholesale honey-dealers, and if every bee-keeper reads the bee-papers (as, of course, every up-to-date bee-keeper does), he will have little trouble about learning where it is best to ship his honey.

Next is the retailing of honey—that is, selling it near home, or to consum-

ers residing within a short radius of the producer. Many bee-keepers, after years of patient effort, have developed a good local demand. If more would do this, I think all would soon find that better prices, both wholesale and retail, would result. Less honey would be sent to the already overloaded city market, and thus, by reason of less quantity, a higher price would be realized; and by cultivating the home market, it would be found that soon more honey would be required to supply it, or else what honey there is to be disposed of there would bring a better price. The fact is, there are thousands upon thousands of people in the country and in small cities that do not see any honey from one year's end to the other. And this ought not so to be. It surely doesn't pay to neglect the home market and overstock the large cities with honey.

And this brings me to a consideration of honey as a staple article. You ask, Will honey ever be used as commonly or as extensively as sugar? Maybe not. But the fact remains that it ought to be used ever so much more generally than it is today. And it is "up to" the bee-keepers themselves to see that honey has its rightful place among the articles of daily consumption. I say daily consumption, and I mean it. I declare that honey should always be on every table, just as much as butter or any kind of sauce or fruit. And surely at the present price of extracted honey, why should it not be eaten daily? Oh, yes, I know that some people say they don't care for honey! But I have found that there are but very few people who would not eat honey pretty regularly if they had a chance.

Right here I want to touch upon the form of honey to be placed before the people, if we ever expect it to be used extensively or by practically everybody.

Of late, my attention has been called to chunk or bulk comb honey, which has been in recent years such a success in certain parts of the South, especially in Texas. Do you know, I believe our Southern brethren have hit upon a good thing, in more ways than one? In the first place, they can produce more honey by their present methods than they could if produced in sections, or even in extracted form. And then, they get a higher price for

it than they could expect for the liquid honey free from the comb. They produce all their honey in shallow extracting frames, then cut it out and put it in tin cans of various sizes, ready to be delivered to the consumer. And I can readily understand how nearly everybody would "take to" such honey, just as naturally as a duck takes to water. It has the real bee-honey taste. There is nothing about it that suggests artificiality, as do the clean, white sections, free from even a stain of propolis or bee-glue. Chunk or canned comb honey shows on its face that it is the real honey, simply cut out of the hive and placed on the market. It could very well be put into tin pails or other receptacles, that may easily be handed out to consumers. I predict that this method—which may seem somewhat slipshod, and savor a little of the back woods—will be practiced pretty generally over the whole country within a very few years. It is a sane, sensible, successful method. It is economical for the producer—no sections needed, but plenty of shallow frames; more comb foundation, more hives, more supers, and then more honey harvested. And, with plenty of such super-room on the hives, there is going to be less swarming. The honey is not removed from the hives till the end of the honey season. Result, a better quality of honey because thoroughly ripened while with the bees.

But I didn't start out to boom chunk, bulk, or canned comb honey. And yet, I believe it is going to prove to be the method which will help most to popularize the use of honey—help make it a staple article of diet sooner than anything else I know of. I think this method needs to be encouraged, because it will also put more money into the pockets of the honey-producers; more money in the bank for the bee-supply manufacturers and dealers; and thus bring the greater financial success to all connected in any way with the industry of bee-keeping. And above and beyond all this—and also more important—more people will be eating honey, and thus more people will have better health, live longer, and be happier. And, maybe, more people will be keeping bees, more bee-keepers will "keep more bees," and thus there will also be produced more and better fruit because of the more perfect fer-

tilization of the fruit blossoms throughout the country on account of the presence of a larger number of bees to do the work.

Now, you may say that all this looks very well on paper, but it is the talk of an enthusiast. All right, let it be so. But what I am telling you is already being accomplished in Texas and other parts of the South—that fair land that has in very recent years been teaching the North how to "sober up" and get rid of the curse of the open saloon, State by State. Who knows but our Southern bee-keeping brethren and sisters will yet teach us of the North how to "sweeten up," as well? Let us not despise our calling, but let us go forth to help make our goodly land "a land flowing with honey," whether it flows with milk or not. Our dairy cousins can look after the cow-and-milk part of it; let us attend to the bees and their honey.

GEORGE W. YORK.

Chicago, Ill., Nov. 15, 1909.

Pres. Kildow—Is there anything to offer on this paper?

Dr. Bohrer—I heartily endorse the paper. I got the impression that our Southern bee-keeping friends are extensively engaged in the production of chunk honey that is out in cans, with the comb and all; but many of the bee-keepers in the North are preparing it in a more economical form than that, and I believe it will, in time, be more generally done in the South as well as the North, because we save the wax, that is, by the use of the extractor. Wax is no more digestible than a diamond or piece of glass, and people are more and more coming to realize that. If honey can be produced in large quantities, and be put on the market at lower rates, you can sell more of it. You can get from six to eight cents a pound wholesale for the honey now. I believe I could sell 20,000 pounds of honey within three months within the limits of my own county—extracted honey. Everybody knows me there, and they don't believe I would put up bogus honey; and, besides that, I tell them how they can catch me if I attempt it, and they take it for granted that I produce the right kind of honey. We have one of the ablest secretaries of the State Board of Health in any part of the United States, and he

would get after any one if he attempted to sell bogus goods.

When you come to extract honey in large quantities, it will have as ready sale as this 90 per cent glucose and 10 per cent cane syrup, and it will very largely supersede it. Every time you say anything to the press about health, throw a stone occasionally right into the vender of glucose and blended syrup, which I say (and make the statement fearless of successful contradiction) is not wholesome food. It is only a question of time when it will increase (if people keep on using it), a disease of the digestive organs; it is on the increase now, and has been for years; we are said to be the greatest dyspeptics in the world.

Why, you go into Europe, and they are not using the corn syrup or glucose, you will see them living on plain diet; and you will see them eating lots of honey. That is the reason they take up the subject in their public schools, and are teaching it there, that they may have a wholesome food.

In the Northern States, I look for the matter of bee-keeping to be completely revolutionized. The man who produces section honey need not be scared; it is not going to be within our lifetime. The time is coming when there will be a very strong demand for it; if the women, now, could be made to see that it gives them a good complexion—the use of honey—our sales would be increased.

Mr. Stone—A great many doctors in this city, and throughout the country, are beginning to prescribe honey for their patients when they have cold. One of the best customers I have in this city is a doctor who talks honey to his patients. A good many come to me and get honey, whom he has sent. This thing is growing, and if we can give them a good quality of honey, instead of glucose syrup, the health of the people will be made better. I would like to ask Dr. Bohrer why it is that glucose is not considered so good?

Glucose Cause of Cancer of the Stomach.

Dr. Bohrer—There is said to be more of the ingredients of sulphuric acid in it than in other sweets. It produces eventually organic disease. I think it is the source of what is known as cancer of the stomach. A good many per-

sons who use considerable glucose—when they quit the use of it and get down to a diet, they get better. I used occasionally to run across a case of cancer of the stomach. I remember a case in Indiana; a soldier of the war of 1812. I told him I could not cure it; that he should regulate his diet, and I said, "Let me send you some honey." I sent him, I think it was, a quinine bottle full of extracted honey; then I sent him a section—a piece of our comb honey—and he sent that right back; he said, "I cannot use that at all, but the other I can use all right." Honey was his standing food—that and a little bread—as long as he lived. The extracted honey was free from wax, and free from all impurities.

Mr. Becker—I see the pure food inspector is making an effort to conform to the law. I was delivering honey over the city here, about a month ago, and I ran across two lots of my honey a year old, that had been inspected, and the label date was on it—the day he inspected it and found it to be pure honey. That is the first time I have seen any label of the inspector.

Mr. York—I would like to know if there are any persons here who have tried producing chunk honey, as they call it in the South. If so, I would like to hear from them; what they have to say about it, for I think it is going to be in good demand. People might as well get into the band wagon first as last.

Mr. Sauer—I have sold quite a little of it, and people like that better than the other. I get 15 cents a pound for it, and charge 18 and 20 cents for the other. The way I do is to cut out a big chunk of honey, put it in a bucket, and fill up with extracted honey, and get 15 cents a pound straight.

Mr. Moore—Last season I sold several hundred pounds of comb honey in that way. I took my imperfect, leaky sections, that I could not class up as No. 1 honey; cut that out, put it in cans, and filled the cans up with extracted honey, and sold it in from 10 to 50 pound lots. I got 12½ cents a pound that way, and sold probably 800 pounds of it.

Mr. Pyles—I think if they were all up around Putman, and had 200 pounds

of chunk honey, and undertook to sell it at about half price, they would have to keep it. They would have hard work to sell it at Putman.

Mr. Coppin—I don't think it would be wise for us to go back to producing chunk honey. If we had some that we could not put on the market in comb honey form—some that could not be sold in the comb as first-class A No. 1—not properly finished, or something of that sort—it might be all right to cut that out and sell it for chunk honey. But we have gone to lots of expense and experimenting in order to get a perfect section of honey, ascertaining the best method to do it, and so on, and we are surely not going back on this to produce chunk honey. Maybe people living in small towns and on farms might make some use of it, but what would they do with it if they wanted to send it to the city? if they had all their honey in chunk form, they could not dispose of it. If we have a fine article in section honey, we can send it to the city, or to any place, and it will always bring a price. I don't think we should go back to that method.

Mr. Moore—An up-to-date bee-keeper, producing first class section honey, sends it to the market, and it nets him probably 12½ cents a pound; by the time it reaches the retailer, it costs 15 to 16 cents, and the consumer pays from 18 to 25 cents a pound for it. By producing chunk honey, and marketing it amongst the working classes of people—the people who cannot afford to pay from 18 to 25 cents a pound—they will probably buy 20 to 25 or 50 pounds of this chunk honey, at 12½ cents, directly from the bee-keeper, and in that way will use more of it. In the other way, they probably would not have honey on their table more than once or twice in the season, if they bought the section honey. They will use the chunk honey constantly on their table; their children will grow up to use it; and this will increase the demand for it. I think this should be worked together. I take pride in producing a first class article in section honey, but I also aim to produce a lot of chunk honey, and, in a good season, where we have a good honey-flow, I should produce lots of it. I have no doubt that in the city of Galesburg alone I could sell several

thousand pounds of chunk honey. A great many people will use much more honey if they can purchase it in this way.

Election of Legislative Committee.

The teller reported the election, for members of the Legislative Committee, the following: Messrs. Stone, Dadant, Kildow, Becker, Coppin, York, Hyde, Bowen, Werner, and Pyle.

President Kildow — The persons whose names have just been read will constitute the Legislative Committee. I think they would better get together and form an outline of what they will do, as soon as possible.

Election of Foul Brood Inspector.

Mr. Bowen—I move that we proceed to the election of a foul brood inspector, for this reason: I believe it is the consensus of opinion that we do not want our President to be foul brood inspector this time, and if we select a foul brood inspector first, then we know what to do about a President. In other words, some of those who are ambitious to become foul brood inspector, and do not get it, would probably like to be President!

The motion was seconded, and carried.

Mr. Dadant—I would ask that the Secretary read the names of the candidates.

Mr. Stone—Messrs. Coppin, Kildow, Moore, and Hinderer.

Mr. Dadant—For information, I want to know if we are to elect by plurality or by majority.

Mr. Bowen—I think it ought to be by majority.

Mr. Becker—I move that it be by majority—the man who receives the least number of votes will be dropped.

Mr. Bowen—After the second ballot the lowest man can be dropped.

Mr. Stone—I will amend that motion. After the first ballot, vote on the two highest; then the one that gets the majority should have it.

Mr. Bowen—That will not do it. That would hardly be right. The motion is, "Be elected by majority of votes; after the second ballot, the lowest one to be dropped from the ballot."

Mr. Pyle—A large number of people may have heard me express myself outside about this matter. I am op-



A. L. KILDOW,
State Foul Brood Inspector for Illinois.

A. L. Kildow, State Foul Brood Inspector, Putnam, Ill., was born in Sheffield, Ill., Dec. 21, 1859.

In his early life he showed a great liking for bees, and purchased two colonies, while yet a boy. These colonies were in old box hives, and in the year 1880 he transferred them, with their increase, to the movable frame hives.

In 1885 he began rearing queens for market. This he continued for many years, and also greatly increased his apiaries.

In 1901 he moved to Putnam, Ill., where he now has 250 colonies. The first summer after moving to Putnam, his bees contracted foul brood from a neighboring apiary. After treating the bees and getting the disease under control, the late J. Q. Smith, State Inspector, visited his yard and approved the treatment. Later he was called upon to assist Smith in looking after other yards in this and neighboring localities. His occupation is fruit raising and bee-keeping. His apiaries are run for comb honey.



Members Present at Morning Session, Nov. 19, 1909.

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|-------------------|------------------------|----------------------|---------------------|
| 1. W. H. Hyde, | 7. A. L. Kildow, | 11. M. B. vier, | 20. John Foster, |
| 2. C. P. Dabant, | 8. J. A. Stone, | 12. Chase Becker, | 21. E. Downey, |
| 3. W. B. Moore, | 9. A. Coppin, | 13. J. W. Bowen, | 22. Frank Hindeler, |
| 4. Geo. W. York, | 10. S. T. Grim, | 14. I. E. Pyles, | 23. R. T. Rigg, |
| 5. Dr. G. Bohrer, | 11. Wm. H. Brubaker, | 15. H. Hinze, | 24. Miss Stewart, |
| 6. L. Werner, | 12. Miss H. C. Holmes, | 16. J. H. Bamberger, | (Stenographer). |

posed to what is known as the majority rule, for the simple fact that a man can go out and canvass, and you are pledged to vote for some man; after he has been dropped, you come to me, to vote for your man, and people can trade. If there are eight men in this room that are in favor of one man, and there are seven men that are in favor of another, and six for another one, and five for the next one—there are four candidates. It doesn't look right, if I am in favor of this one man, to have him dropped, because I am as much in favor of him on the last ballot as I am on the first one. I should have a right to vote for that man just as long as the voting lasts, and that vote should count just as much. If you are going to shut me off from voting for my candidate, you might as well let plurality rule first as last. It is the plurality vote that really decides, in the long run, because if I think the man I vote for is the best man, I would vote for him just as long as I stayed in this room, and you folks would refuse to count it. For my part, I would be in favor of the plurality rule, because that is what decides it, anyway.

Mr. Bowen—It is, of course, understood that if some one gets the majority of votes on the first ballot, then you take his name. Suppose one man gets 8 votes; another 7; another 6; another 5—if those 7, 6 and 5 conclude they would rather have one of the 7, 6 and 5 candidates, there would be 18 votes against 8; now, that is a majority, and the majority elects the candidate.

On a vote being taken the motion was carried.

President—Proceed with the election.

Member—I vote the Chair appoint the Tellers.

President—I appoint the same two as acted on the other.

The result of the balloting was: Mr. Kildow, 17 votes; Mr. Coppin, 12, and Mr. Hinderer, 2. Mr. Kildow, receiving the majority of votes, was declared elected to the office of foul brood inspector.

Election of Officers.

Mr. Stone—I don't think we can do any better than to pick out one of the men who is most widely known in the United States as a bee-keeper, and that is Mr. C. P. Dadant—the largest bee-

keeper in this State—and he is not too old to put in an office like the presidency of this Association.

I don't believe we can fill the place with any other man as well as we can with him, so I nominate Mr. C. P. Dadant for President.

Mr. Pyles—I move that the Secretary be instructed to cast the ballot for Mr. Dadant for President of this Association.

The motion was seconded and carried.

Mr. Dadant—I want to thank this Association for the vote. It is certainly very kind, especially under the circumstances, in the light of what was said yesterday in regard to the accusations made by a certain man in Illinois; but I feel there are but few people who believe what he said.

Mr. York—I want to congratulate this Association on electing a man like Mr. Dadant to the presidency. He is known on two continents. He is a man that has time to attend to these things, and also to attend conventions.

Mr. York—For five Vice Presidents: I think it would be well to write the names on slips of paper and let the five highest be the ones elected.

Mr. Pyles—I move that this be done by ballot, and the five that receive the highest number of votes declared Vice Presidents, in the order in which they receive them.

The motion was seconded and carried.

The result of the ballot was as follows: Mr. Coppin, 1st; Mr. Bowen, 2d; Mr. Werner, 3d; Mr. Moore, 4th, and Mr. Pyle, 5th Vice President.

Mr. Pyles—In view of the recognized ability and earnestness of the man who has held the office of Secretary of the Illinois Bee-keepers' Association for so many years, I move the acting President cast the vote of the Association for Mr. Stone for the office of Secretary of this Association.

Mr. Becker—I would like to make a motion that the salary of the Secretary be fixed before we elect him, and I move that the new Secretary receive the same amount as he got this year—\$75.00.

The motion was seconded and carried.

Mr. Dadant—I second the motion made by Mr. Pyle that the President cast the vote for Secretary.

The motion was put and carried.

By a similar motion Mr. Becker was re-elected Treasurer, and his compensation was fixed at \$25.00.

Mr. Becker—I thank you very much for the election and for the increase of \$10 in the salary. I didn't ask for an increase, or anything of the kind.

Time of Meeting.

Mr. Dadant—I would like to suggest that it might be a good plan to change our day of meeting. The railroad rates now are not so different as when large conventions met here at low rates. It would be much better for us if we could come at a time when the city was not so crowded. I would like to hear it discussed, whether we would not better come at a time, either before or after the Odd Fellows, or at some time other than when these different gatherings are held here, so as to have better accommodations for those who attend our convention.

President Kildow—I would rather be here when I could have better accommodations; the railroad fare now, as Mr. Dadant has said, does not cut much figure; it used to make a difference, but it does not make so much difference now.

Mr. Stone—I guess you all understand how we failed to get rates this year, for the convention at this time. The Odd Fellows had railroad rates, but those rates closed on Tuesday. When we sent out our notices of the meeting, I supposed we could get those rates, also; we did not know that they were going to close on Tuesday; the railroads did not notify as to when they would close. It is a good thing to have it the same week as they have theirs; you see, we have not been crowded out of the hotel, although we had to shove out of the way as we came in. But there is no objection to the meeting being placed at any other time if the convention see fit to do so.

Mr. Moore—As far as the reduced rates are concerned, I don't think that will cut much figure. The railroads did not all make reduced rates, even for the Odd Fellows; rates might possibly have been made with roads radiating from Springfield, but connecting lines didn't do so, and even if I lived on a road that was making reduced rates, I would sooner pay full fare and have better hotel accommodations than

we have had since we came here. I don't like to sleep on a cot, and I don't like being crowded up with four or five men in a room. Speaking for myself, and I think the majority here feel the same way, I would rather come at a time when there would not be so much of a crowd.

Mr. Foster—There are some disadvantages, but there are some advantages. We have this week off, and when we come down here to attend the Grand Lodge, we have no objection to staying over, but some of us would not come to the convention if the meetings were held at any other time. It makes a difference, and I know there are different ones who will come next year, if it is held at the same time that the Odd Fellows come here, and we can get more to come if it is held at that time.

Mr. Pyles—If we have the meetings on Thursday and Friday, as we have been holding them usually; if people are off from the direct line to Springfield, they must start the day before to get here, or else we get here late. I like to be here when the meetings are first called. We have to start from our place the day before in order to get here on time. I think it would be better if we were to come here on Wednesday, and not have the Odd Fellows to contend with. Wednesday night there were seven of us slept in the hotel in one room. For me, at least, it would be a great accommodation to be able to come some time when we are not so crowded. I think we can get almost as great an attendance. People don't like to be crowded at any time.

Mr. Stone—I would like to ask, how many are here who came to the Odd Fellows' meeting and to this, too?

Mr. Coppin—I would not have come, for one, but for the advantage I got by coming to the Odd Fellows. I had the advantage of the excursion rates, and I believe it would not be a bad idea if more of the bee-keepers were Odd Fellows. It would not hurt them to become Odd Fellows and be interested in both. If it comes in just like it did this time—Thursday and Friday—we would get them to attend both conventions with one expense. I think we could make arrangements and find a place where they would not be crowded, to sleep. We could put up with it for one or two nights, and then there

would be plenty of room. I think it is a good idea to have the convention meet at the same time as the Odd Fellows meet.

Mr. Dadant—If the members who intend to come to this meeting would write to the Secretary, the possibilities are that we could get private houses, and lodge there, and then get our meals at restaurants. I introduced this subject merely to find out what the members thought. For my part, it does not make any difference; I am very well fixed. I have a private house, which does not entertain Odd Fellows, except myself. I would suggest, from what I have heard, that if the Secretary would put in a card, when he sends invitations to bee-keepers, that if they will let him know, he can make arrangements for them, and if it costs him a few dollars, and he charges the Association for it, to find lodging places, I believe it would be better for the Association. If it costs \$10.00 of time, I believe it would be just, and we could meet at the same time as do the Odd Fellows, or at some time right after, and you would draw a crowd. I think the bee-keepers would be more liable to come if they knew they could get accommodations.

Mr. Becker—The trouble is, all went to one house. Mr. Stone had selected that, at \$1.25 a day, but as far as the Odd Fellows crowding the hotels in Springfield, they can't do it. The only thing is, that these cheaper houses are occupied. Now, if you want to pay 50 cents for a room, you can get plenty of good rooms, with steam heat. I always stop here in the city; have a fine room, and a good bed, and pay only 50 cents for the night.

Mr. Moore—I want to say I have no complaint about the service where we stopped; the tables were all right; the meals were good, and we had plenty to eat, but what I object to is the crowd. I do not like to be crowded. I like to have a comfortable bed to sleep in. I slept on a cot, and it was not very comfortable.

Keeping Extracting Frames.

Mr. Bowen—I would like a little information as to what is the best way to take care of extracting frames, with honey in, where to keep them. For instance: Suppose you have a

number of them, and want to keep them over from one season to another, and are not very well fixed for room. I don't care to extract the honey at present. Would it be a good idea to put them in hive-bodies and set them over the bees? My bees I have covered with oil-cloth.

Mr. Coppin—I would think the better place to put them would be in the brood-chambers, and then put them in the house, where you can keep them dry and warm. Outside of that, as good a place, if you could not keep them warm, would be to put them on top of the colony, the same as you are speaking about; but you would be to quite a loss if you did that. Your honey would candy; the bees could not use it the next season.

Mr. Bowen—How would it do to have a warm, dry cellar?

Mr. Coppin—That would be all right.

Mr. Becker—I have a box made, and then set one on top of the other, and about twice during the summer I put on some bi-sulphide of carbon; that kills all the moths. Just take a little cup of some kind and pour about two tablespoonfuls or more in it, and that will kill any moths, and keep mice away.

Mr. Dadant—I will tell you a cheap way to do it, if you have ten, fifteen, or twenty frames. Take a piece of rag and pour bi-sulphide on the rag, and lay that on the frames, and that evaporates from the rag. It is heavy and inflammable; don't put it next to the light.

Mr. Becker—Twenty-five cents a pound can is what bi-sulphide costs.

President Kildow—You have to cover it all over?

Mr. Dadant—Of course it has to be air-tight.

Mr. Coppin—It seems to me you are getting a little away from the point. I thought Mr. Bowen's question was as to the best method of keeping those extracting combs from fall until spring—frames that were full of honey, where you are not prepared to keep them in a warm room. Between the fall and spring, there is no danger of moths hurting them; if you have a very warm place to keep them and take them in, it would be all right for the honey, but it might mean something to keep the moths away.

Mr. Bowen—Suppose we had the hive-bodies of frames over the brood-chamber, and put on the bi-sulphide, and there should happen to be a hole so that the fumes would get into the brood-chamber, what would be the effect on the bees?

Mr. Dadant—Kill the bees, of course.

Mr. Stone—Perhaps if I gave my experience, it would be the information Mr. Bowen wants. Did you want to save the comb over until next spring?

Mr. Bowen—For use, yes, sir.

Mr. Dadant—Full or empty?

Mr. Bowen—Full.

Mr. Stone—Why don't you extract the honey?

Mr. Bowen—I don't want to. I have never been bothered with granulation very much.

Mr. Stone—I have been delayed several times with some honey on the hives to extract, and I moved it to the cellar, where I have a hot-water furnace, and the cellar is warmer than any room in the house. I moved the extractor down there, and when it is a bad day, I go down there and do the extracting. I don't believe it ever candies there, and I believe it would keep there all winter in the same shape as you put it in. If the moths get in, put a little bi-sulphide on the top of the frame. It is as explosive as gasoline, and you have to use it carefully. If you get a little of it on your finger, your finger feels as cold as ice.

Mr. Werner—I have over one hundred frames of honey in my house. I don't use anything of the kind, and they are just as nice today as the day I put them in; am never troubled with any moths getting in.

Mr. Werner—Those frames he can put in a hive body and set right outside where the other frames are.

Mr. Bowen—I have in my out-apiaries, about 20 miles from home, quite a good deal of honey in extracting frames. I don't care to extract them now; and what I want to know is the best way to keep them until spring.

President Kildow—I would bring them home and stack them up in my house, somehow.

Mr. Moore—I never advise putting them in a hive body and then on top, even with an oil-cloth over it. You

winter bees out-doors, and you will have trouble by loss of heat; the bees will have to keep that upper body warm; and you will stand a pretty good chance of losing your bees altogether. I would sooner, in a case of that kind, put them in a dry shed, or a dry barn, anywhere that I could stack those hive bodies up, if I had not house-room for them; it would, of course, be better if you could put them in the house.

Mr. Bowen—We have tried the cellar, where the cellar is warm.

President Kildow—I would advise putting them in the driest place that you have.

Mr. Dadant—When I advised the use of rags with bi-sulphide of carbon, I expected you would have it in the house. I never would use bi-sulphide over the hive; I don't think it is advisable. You want to use it in a closed place, where there will not be a current of air to blow it away before it has its effect.

Mr. Stone—Would it do at all to have comb honey in brood-frames on top of hives through the winter?

A Member—It would not do at all to have section honey in there; it gets damp and moist; the heat of the bees and the cold make a moisture, so that the water would run out of the hives at times, and, in the spring, the comb honey (the section) will have been wet and then dry, and they will all be warped out of shape and mouldy, and the honey will be acid. Where I would leave a section on by mistake, I would find moths. I found where I had left a case of sections on top the hives, it was in such poor shape that it was not fit for table use, or to market, or fit for anything. It had to be extracted, and then it was acid, and not worth much, not worth anything, in fact. I would not consider for a minute leaving honey in any shape on top the hive during the winter.

Mr. Sauer—About granulation in brood-chambers, will that not liquefy in early spring?

Mr. Pyles—No, it will not.

On motion, the convention adjourned, subject to the call of the Executive Committee.

PROCEEDINGS
OF THE
ANNUAL CONVENTION
OF THE
Chicago-Northwestern Bee-Keepers' Association
Held at Chicago, Illinois, December 1 and 2, 1909.

The opening session was held, Wednesday, December 1, 1909, at the Briggs House, at 10:30 a. m., President George W. York, of Chicago, occupying the chair, and Mr. H. F. Moore, the Secretary, acting as such.

President York called the meeting to order, then the following invocation was offered by Rev. Rufus Judson Wyckoff, pastor of the Ravenswood (Chicago) Methodist Episcopal church:

Prayer by Dr. Wyckoff.

It is fitting, our Heavenly Father, that we recognize, in the opening hour of this, our session, Thee, our Creator. We were made in Thy own image. Thou hast created us, and hast put us in this world, so full of mystery; so full of power; so full of beauty, and hast given unto us the faculties with which we may overcome the things of this world. All through the centuries we have been finding out the secret mysteries and powers of the life that surrounds us, and we pray that in this beautiful and delicate field in which Thou hast placed us, and the work to which Thou hast called us, we may approach our unsolved problems without fear, and with the feeling that God is always here.

We thank Thee that Thou art in nature; in the vast ocean; in the flapping of the bee's wings, as well as in the movement of the angel's wings,

and that Thou hast placed us here to carry out the high ideals of the Master, and thus to attain the best, the truest, and the highest manhood.

We pray that our life may be so molded, day by day and hour by hour, that we may reflect Thy image.

Bless us together, as brothers in one common, beautiful calling, and bless us in all our deliberations here in this convention assembled; and bless those who, through patient years of study and effort, have learned so much of this high calling.

Bless us as we exchange thoughts one with another, and learn the secrets and mysteries of the lives of the bees over which Thou hast placed us, and make us devout in all our work. Bless us as we together sit during the hours of this convention, and may we go home feeling we are the better for having come together, and have gained the knowledge which we are seeking; and finally give us an abundance entrance into Thy Kingdom, when the task of life on earth has been completed. Amen.

President York—The Secretary has prepared a short program; he has not all the papers in, but sufficient to open this morning's session. Usually, at these meetings, one of the first things is the introduction of those present. It seems to me, as I look over this company, there are more here whom I have



GEORGE W. YORK,
President Chicago Northwestern Bee-Keepers'
Association.

not met before than at any opening session I recall, so I think we will wait until a little later, before we have the introductions, and possibly others will come in.

Secretary-Treasurer Moore then read the minutes of the last meeting, in brief, which were approved.

President York—I will ask Mr. H. M. Arnd to distribute slips of paper for questions for our program, and to do anything else that an usher might do; see that the members are made comfortable, etc. Now, perhaps, while the Secretary is getting his report ready, we might have the introductions. If each person will rise, I will give his or

her name, and the State from which they came. (Introduction of members followed.)

Mr. Moore—The Treasurer might say that the report is rather short; to say that it is sweet would not hardly be the truth. (Treasurer's report given.) The total sum taken in during the year was \$76.80. There were quite a few who paid \$1.25, on account of joining the National and the Illinois State Associations. There was quite a discussion here at the time the vote was taken to join the National and the Illinois State Associations. The proposition is this: If we take in \$1.00, \$.50 goes to the National and \$.25 to the Illinois State, and that gives a quarter for our Association, so that quite a few gave a quarter extra. The total amount received was \$76.80; total amount paid out, \$89.25. So the Secretary paid out of his own pocket \$12.45 up to today. It is a little bit disagreeable to talk about financial matters, but, of course, we all understand it takes money to do business; the hotel charges us \$20.00 for the use of this room for two days; that is not exorbitant, considering the way prices are in Chicago; at this time of the year, the International Live Stock Exposition being here, business is very congested.



HERMAN F. MOORE,
Retiring Secretary Chicago-Northwestern
Bee-Keepers' Association.

We have met so many years in this room that it seems desirable to meet here. We spend our time looking around to find suitable quarters, and you can very easily spend from \$60.00 to \$75.00 for a place in this city, so that \$20.00 seems to be the best we can do. These things were discussed at great length last year. It seems that

those who come here enjoy these discussions; you are at an expense of from \$10.00 to \$50.00 to come here, and you have a good time. I would urge you all to join the Association and pay your dollar, because you see it does not really pay out, and it is a very important matter that every one should help a little. We start in with a deficit of \$12.45. We begin all over now at the beginning of this meeting; you can join the National in a body, or not; you can do what you did last year, or you can do differently; the entire matter is before you; you are absolutely free to do or not to do, just as you please.

On motion, President York appointed an Auditing Committee of three, to be ready to report by tomorrow morning, as follows: Jacob Huffman, of Wisconsin; Louis C. Dadant and R. W. L. Boyden, of Illinois.

Secretary Moore then read letters from bee-keepers who could not be present, expressing their regret over their enforced absence.

The question-box was then taken up.

Swarm Control.

"Who has tried the Alexander method of swarm control, and with what success?"

Dr. Miller—Possibly, by that is meant the Alexander method of increase; it might be called that as well as swarm control. I am not so sure, but the one thing that Mr. Alexander has that especially belongs to him, is the taking of an upper story and putting all the brood in that above an excluder, leaving it there for about ten days, and then taking the brood away and using it elsewhere.

Mr. Huffman—That method, I think Mr. Allen, of Wisconsin, has tried pretty thoroughly, and he says it has proved a success—putting the brood above and the queen below the excluder—and he has no swarms to speak of.

Dr. Miller—Just as has been said now, that is, perhaps, a little different thing, and, really, that is the Demaree plan of prevention of swarming, given a great many years ago. Put the brood all over an excluder, and allow the brood to hatch out there. For years I thought there would never be a case of swarming with that, but some have had swarming with it.

When working for extracted honey, the plan is an excellent one, because you have your force all kept together; but it does not work so well for comb honey, because you are sure to have those up-stairs combs filled with honey, and you don't want that.

Mr. Cavanagh—That plan works all right, if you want to prevent swarming, but there is another feature that is not so good, and unless you give something to start the brood below, a great many of those queens will turn up missing. I have lost several queens with the Demaree plan.

Dr. Miller—Have you tried it with hiving on one frame of brood?

Mr. Cavanagh—Yes; that works all right, but on just empty combs it does not work so well.

Mr. Hall—I think that is a splendid way to keep the foul brood in operation; it will keep it going nicely, if you do that.

Dr. Miller—Without any chance for argument on that, I will say I don't agree with him at all.

A Member—Amen!

Mr. Hall—My bees have had foul brood, and I failed to cure it, if I had any combs left with the least bit of foul brood in, by putting the queen below.

Mr. Cavanagh—He has anticipated what I was working at. I found it would not work along that line, either. We were talking about prevention of swarming. It will not kill European foul brood when the disease is above the excluder.

Prospect for White Clover.

"Is the prospect good for a clover honey crop in 1910?"

President York—How many think it is—raise your hands? (14.)

Dr. Miller—How do they know?

Mr. Thompson—Well, for one reason, the ground being well filled with water, the clover is in fine condition to winter, and the prospect is very favorable; that is all we have to look at at the present time.

Mr. Offner—There is lots of sweet clover around our place; last summer the fields were just covered with it.

President York—I suppose, referring to clover here, means white clover; but it would be all right to mention the other, also.

Mr. Huffman—The question is a very hard one to answer. You can pass your opinion on the present condition,

but you do not know what the crop will be. I saw a solid mass of white clover, with no seed sown or anything; it came up voluntarily all along the road; everywhere white clover was in abundance; from that, it is a pretty good indication of a good crop for next year.

President York—This question asks for prospect, so it is all right to give your opinion on the prospect.

Mr. Kannenberg—In the fall of 1907, we had a wet year, and we had pretty nearly seven inches of rain; the clover got rooted down good; and 1908 was a good honey year. In the fall of 1908, we didn't have any rain at all, and in 1909 we had very little clover. This fall we have had plenty of rain, and the conditions are good. I think the prospects for a good clover crop for next year are very good.

President York—Is the prospect good for a clover honey crop for 1910?

Dr. Miller—I beg your pardon; I thought it was what we know. If it is what we think, I would say—if you put it in that shape—I want to change my answer. If it is: Do we think the prospect is good? I would say, of course. Any man that is a bee-keeper that does not expect the prospect good for another year—well, he ought to be put out!

Mr. Baxter—I differ from Dr. Miller in that respect. Last fall, notwithstanding what Gleanings in Bee Culture said all along, I felt from the beginning that we would have no white clover this year, and it turned out that way. This year the prospect with us is very good; we have a fine stand of white clover; we expect a good crop next year, provided conditions are right in the spring.

Basswood Honey-Dew.

"Is extracted basswood honey-dew good for table honey?"

Mr. Huffman—I never saw any.

Mr. Thompson—It is fit for the table, if used as an ornament!

President York—How many have seen honey-dew on basswood? I don't see any hands up.

Keeping Prices of Honey Up.

"Granting that honey commands an advanced price this autumn, how can we retain the advance?"

President York—That is for another season, I suppose.

Dr. Miller—Find out what made the advance, and then do the same thing over again.

A Member—A good suggestion.

President York—In other words, how can we keep up the price of honey when it is up?

Mr. Kannenberg—Keep the honey when there is an overflow. If you ship it in all in one lot, the price, of course, will drop.

President York—Keep it coming to market in small lots.

Mr. Huffman—If a short crop is what is causing the advance in price, perhaps we would not want to see it again.

President York—Does a short crop always cause an advance in price? How about it?

Mr. Cavanagh—Of course an over-production generally weakens prices on any commodity, but there are several bee-keepers, whom I know, who held part of their crop over to this year. There is a good suggestion, if a man is financially in shape to take hold of it. I know lots of bee-keepers that stocked upon fine honey at low prices, and are realizing a good profit this year on it.

President York—The honey business is the same as anything else—it takes money to make money.

Dr. Bohrer—My impression is that the amount of honey produced has very little effect on the prices in the country at large; it will not affect it; but what has caused the increase in price of honey and the sale of it is the fact that we have a pure food law; many of the States have it, and there is also a National law. People are beginning to believe that honey that is put on the market as honey is such, and every package that is labeled "Honey" has to be such under that law. People—hundreds of them—are asking me if it is having any effect. I say, of course, it is; where people will take the pains to inquire where it came from, and if they will put it in the hands of the Board of Health, they will ascertain very quickly what it is, and if it is not pure honey, that man will be taken care of. That is what is affecting and increasing the prices of honey and the demand for honey at the present time, and it will continue to do so; so nobody needs to be scared of an over-production of honey. It may in isolated localities. If I can produce twenty

thousand pounds of honey, I can sell it in the locality in which I live, because people are satisfied it is going to be pure honey, just as the bees stored it, and even if I were so inclined, they know I dare not put anything on the market except absolutely pure honey. There is no danger in an over-production of honey at all.

Mr. Winter—Last year, at this time, the commission men here in Chicago paid about 13 cents a pound for comb honey, and in the last papers I got I noticed that they paid from 16 to 16½ cents; there is 3 to 3½ cents difference per pound more on comb honey. What caused that? I took it that there was a less supply, but on extracted honey, is it not pretty nearly the same as the quotations a year ago?

Dr. Bohrer—Would not the increase in demand have the same effect?

Mr. Winter—Yes.

Closing Up Extracted Honey.

"Is it wise to close extracted honey up tight, right after it is extracted?"

Mr. Lathrop—After it is extracted, I let it settle, and after I consider it has had time to settle, I draw it off and seal it up tight. I don't think that there is anything wrong about that—not with me.

Mr. Thompson—I would like to ask what there is that requires time for it to settle—about the time it has to settle.

Mr. Lathrop—If you pour honey into a barrel as it comes from the extractor, it will carry with it small particles, and if you leave it in a storage tank a couple of days, this will all be at the top and you can skim it off; you don't need to take it off, necessarily, but draw the honey from the bottom; and as soon as I draw it off, and put it in small packages, I seal it up tight. I would just as soon do that the very day it is extracted, unless just for the purpose of getting the honey a little clearer by settling.

Dr. Miller—I would like to ask Mr. Lathrop if he does not think the temperature of the honey has a little to do with the time. If it is quite warm, won't it settle quicker than if it is cool?

Mr. Lathrop—I think it would.

Mr. Kannenberg—My experience has taught me that if you extract honey and close it up tight right after you have extracted it, it will turn sour. I

think, for that reason, it is wise to leave the honey settle before you close it up tight. If I closed it up tight right away, I found I got sour honey after it granulated; and if I wanted to dissolve it again, it would sour.

L. C. Dadant—If honey is taken off when it is ripe, you can close it up immediately, and put it right in barrels; but be sure the honey is ripe; if not, it will have to stand.

Mr. Kannenberg—I know my honey was ripe, because I left it on the hive until there was no more honey coming in, and I am sure the bees ripened it, it was so thick. I left it a little too long to get it extracted. When I did get at it, it was hard to get out of the combs; I know that honey was as ripe as any honey.

Mr. Cavanagh—From what source was that honey? And was it in damp weather? It makes a difference whether the honey should be sealed up or not, and what the source is.

Mr. Kannenberg—The honey was mixed, from sweet clover and white clover, and some other kind of flowers. I know it was mixed.

Mr. Baxter—My experience has been, during the last thirty years, that I extract my honey when it is thoroughly ripe, and never before. I put it in barrels right in the apairy; I bung it up tight, and leave it that way until I want to use it. I draw it out in 60-pound cans any time before it has candied; in that way I have perfectly clear honey; instead of settling, it rises. What I draw out is perfectly clear. All that time I never had any trouble with sour honey. Once in a while you will have honey that will be of a sour flavor, no matter how ripe it is when it is extracted; it is because of the source or flower from which it is gathered; that occurs very rarely, and usually in the fall. You can bung up perfectly ripe extracted honey and leave it there for years, and it will be the same in ten years after as when you put it in.

Mr. Macklin—Last year I had quite a crop of extracted honey; I sealed it up in cans and barrels at once; it has not been touched or looked at until this fall. I melted it up, and every bit of it is in good shape; not a particle of it soured. It was left on the hives until it was ripe, except the unfinished sections.

Dr. Bohrer—Did you have more, or

less, rain during the honey season this year than last?

Mr. Cavanagh—More; last year was a drier season.

Mr. Moore—Can we get anything instructive on this, about the question of this being sweet clover honey? I am prejudiced against sweet clover honey, and I want to know whether ripe sweet clover honey will act worse than any other ripe honey? I have known Mr. Cavanagh's honey was largely sweet clover, and Mr. Dadant, near the Mississippi river, don't have sweet clover honey.

Mr. Dadant—We have a little, but not much.

Mr. Huffman—I am with Mr. Dadant in regard to the honey question; if you have the honey thoroughly seasoned, I don't care what kind it is, it is not going to sour; but if you take it where it is not seasoned, and put together and extract it, you are very apt to have a little trouble with that honey. I had quite a little bit of sour honey about ten years ago; I left it on and supposed it was ripe all right, and put it in barrels, and the top of those barrels would get thin; it got sour, and I had to use it to feed.

Mr. Kannenberg (exhibiting some honey in bottles)—This honey granulated inside of a week; that is what I dissolved yesterday. If anybody tastes it, he will know that it is sour; that was granulated inside of a week after it was extracted. In the small bottle is the foam that was on top.

Mr. Thompson—Was the honey all sealed over, or what portion of it was unsealed?

Mr. Kannenberg—All sealed over; every comb was sealed, and so thick I could hardly extract it.

Mr. Cavanagh—I have noticed, a great many times, that honey that is taken late in the fall, if there is any possible chance for water to get into it, it will ferment a little in the comb; it may be ripened and still draw moisture, and if it draws moisture, it may ferment.

A Member—I would like to ask this gentleman where he kept this honey, after he extracted it?

Mr. Kannenberg—I put my honey up in the attic, a pretty warm place.

Mr. Baxter—I believe the whole trouble with that honey is the source from which it is gathered; there is fruit juice in it; that is what makes

the trouble—not the ripening of the honey or the bunging of it up; it is the contents in that honey.

President York—Probably the kind of honey is what caused the trouble.

Best Hive-Cover.

“What is the best cover for hives?”

Dr. Bohrer—I have a number of different kinds of covers for hives, and very few of them have been satisfactory. Of course, if we can attend to the matter of giving them a coat or two of paint every spring, they will hold out better, but a great many of us do not do that. I find I skip them every two or three years. I have found what is termed the “Acme” hive, and I think that is the best; it has a cover of galvanized iron; I put immediately under the iron a few thicknesses of newspaper; I think it is not so hot in summer, and will be a better protection in winter; it telescopes over the top of the hive, and the part that forms the telescope ought not to be made out of very thin lumber; $\frac{3}{4}$ of an inch, or $\frac{7}{8}$ of an inch would be better. I advise bee-keepers, in looking after covers, to look after that matter. You get down to $\frac{3}{8}$ of an inch lumber, it is too thin; $\frac{3}{4}$ or $\frac{7}{8}$ lumber, a well-painted cover with galvanized iron—you have something that will stay with you.

Mr. Macklin—I have used California red-wood for ten years. I speak only as to durability; those covers never warped; they are just as good as the day they were made. I gave them two coats of paint when they were made, and have never painted them since. They have given good service, as far as lasting is concerned.

Dr. Miller—A single board?

Mr. Macklin—A single board; two boards made out of 8-inch stuff; there is a ridge board over the joint.

Dr. Miller—Where did you get that lumber?

Mr. Macklin—From a local lumber yard.

Dr. Miller—I believe you have right there a very important topic, for a man to say that he had a single board cover that didn't warp. If you can have a single board cover of red-wood that will not warp, it is of importance to us to know it.

Mr. Macklin—I have had it in use for ten years, and you can lay a square

on any side of it—it will touch clear across.

Dr. Miller—We have something of very great importance, if that will prove true always—a single board pine cover, I don't care how you make it, it will twist at one corner or the other, and will let a bee in or out. If red-wood will hold its reputation generally, that is something we ought to know. I don't believe we know all about the matter of hive-covers yet. For instance: Dr. Bohrer says you must not have too thin stuff; he is right in that; yet it depends a little on how that thin stuff is used. The hive-covers that I have in use now, any one of them, is not thicker than $\frac{3}{8}$, and that very thinness, used in a certain way, it is an advantage, because a thin board will not have as much power to warp as a thick one; if you have one layer of a board with the grain running one way, and then another running the other way, then you are safer against warping. Another point: I believe you have the advantage, if you have those two layers with spaces between them. You may call it dead air space, but it is not by any means; but an air space in there keeps it warm in winter and cooler in summer, because that space makes a non-conductor there. As to the material to cover it with, I have some that are covered with tin, painted, and some with zinc, that is, without any tin. I like the zinc, I think, better, because there is no paint needed with them.

Mr. Kannenberg—Dr. Miller prescribes those covers. I would not have them for a gift, because I have handled them, and they warp right in the middle. I don't know just exactly how his covers do, but I know that kind of cover, where there is an air-space between the boards, will warp in the middle.

Dr. Bohrer—There seems to be some misunderstanding about what I called the "Acme" cover—about how it is made. Mr. Arnd is here; he has some bee-supplies in town, and I would suggest that he bring one of them here this afternoon, in order that everybody may see how they are made. With regard to covering them with tin or zinc, I find that zinc will, in time, give out when exposed to the open air; galvanized iron, if painted two or three times, will last longer.

With regard to red-wood, I have made a number of bottom-boards out of it. I get the board the exact width of my hives; cut it the length I want; dress it, and nail the board on that, and never have had it to shrink or warp at all. It warps less than any other lumber I have ever had; there are a great many kinds of boards that are not fit to use at all; they ought never to be put on the market. I have lost a good many colonies of bees by their allowing mice to get in. Regarding the "Acme" cover, it will cost you something more than the ordinary cover, but you had better pay a little more and get something that will satisfy you.

Mr. Moore—I think this hive cover question is quite a burning question.

I want to move that Mr. Arnd and Mr. Boyden be requested to bring over a little exhibit of hive-covers for the afternoon session.

The motion was seconded and carried.

Dr. Miller—I want to find out something about that cover that lets the bees through. Where do you say the bees go to?

Mr. Kannenberg—The corners are down, but the middle warps up.

Dr. Miller (illustrating)—Down at that corner, and down at this, then up there (indicating the middle). In my locality they don't do that! Those two surfaces—the grain running one way and one running the other—are those two surfaces right flat, one on top the other?

Mr. Kannenberg—No air-space between.

Dr. Miller—I don't understand it; it must be a peculiar locality!

The convention then adjourned, to meet at 1:30 p. m.

AFTERNOON SESSION.

The convention met at 1:30 p. m., as per adjournment, with President York in the chair. The question box was resumed.

Getting Candied Honey From Barrels.

"What is the best method for getting candied honey out of barrels?"

Mr. Cavanagh—I don't know the best way; one way is to roll the barrel up on an incline plank; have a little platform; take the hoops off the barrel;

take an axe and chop the candied honey up and shovel it into a tank.

President York—Any other method? Is there any other way to get granulated honey—candied honey—out of barrels?

L. C. Dadant—Use a spade; dip your spade in hot water; let it get thoroughly hot, and you will find it will go right down through the honey with very little trouble.

Mr. Rodenberg—That is the easiest part—to get the spade into it—but getting the spade out, you get a chunk of honey.

Mr. Dadant—It is kind of sticky; you have a hard job anyway you put it; but, if granulated, the honey will come right out.

Cement Hive Bottoms.

“How many have tried cement for hive bottoms?”

President York—All who have tried cement for hive bottoms, raise your hands. (4.)

Mr. Horstmann—That question is not exactly plain. Do they mean for the bottom of the brood chamber, or stand for the hive to rest on?

Mr. Huffman—I put that question in. I wanted to see how many have tried it. I tried it, but I don't like it, but I prefer it for a hive stand. I have about two hundred of them in use; I don't think there is anything better; I don't think there will be any dampness; there will not be as much dampness as there would be with a wooden stand.

Dr. Miller—Tell us exactly how they are made, and what they cost.

Mr. Huffman—As to the stand alone—you can get them made for about 5 cents each; you can't get a board stand for that. I make mine 16 inches wide by 26 inches long; large enough for a bottom to 10-inch frame Langstroth hive. Mr. France is using a lot of them; he said he would not have anything else. I have been using mine about two years.

A Member—How thick?

Mr. Huffman—Two or $2\frac{1}{2}$ inches.

Mr. Holtermann—How do you make them?

Mr. Huffman—I hire a man to make them.

Mr. Holtermann—The upper part, does it form the shape of the bottom-board?

Mr. Huffman—No, it is perfectly smooth and level; put cement around the sides and finish it off on top just the same as you would a sidewalk.

Mr. Cavanagh—Would it not be just as well to have a hole in the center of that stand and use less cement?

Mr. Huffman—I am like the Irishman was with the boot; I believe the more material you can get for the money, the better. The better and surest way to move them, is to set them up on edge.

Dr. Miller—Coming back to Mr. Cavanaugh's question, whether it might not be better to have only the rim, there is another thing; if you have a flatboard surface, or a bottom-board to stand upon, that holds the water, and both the bottom-board and the stand will rot from that. The question is, Will not the water between the bottom-board and this cement do the same? If it does, there will be an advantage in having merely the rim. If you have a hive setting upon a flat surface, a flat board, there is a kind of large black ant that gets in and will honey-comb the whole thing; before you know it, they will eat right through the bottom-board; two surfaces coming together favor that; I don't know whether they would work with the cement the same as the other; my idea would be that it would be an advantage to have merely an edge of the cement instead of the flat surface. If you are going to have a lot of stands, in a place where you know you are going to have them permanently, would it not be better and cheaper to have them built on the ground?

Mr. Huffman—That is what my son says. I would prefer the stand of itself. As to what Dr. Miller says in regard to the ants bothering, I don't think they will bother. I don't think, as Dr. Miller says in regard to rotting the bottom-board, that the dampness is enough for that, if you set it with a little incline, there will not be enough dampness to cause any effect as to rotting; this cement business is all new to us.

Mr. Rodenberg—I have planned to make cement stands next spring for mine, and my idea was to make them to remain permanently right where the stand is to be; make small cement blocks at each corner of the hive to

rest on; that will leave air circulation at each end, and keep dry and clean.

Dr. Bohrer—Several have stated we have been using them; I have, for two years; I make them differently; I make a block long enough to reach across a 10-frame Langstroth hive, and make it square. I cut some boards to fit and put it right down on the ground; mix the cement 1 to 5—one of cement to five of sand. Drive sticks around the mold after you have smoothed off the top, and in five minutes time you can take the boards away and the block is completed. That makes a very hard block, and one you can carry anywhere you please. The front block I make so as to answer the purpose of a landing board. I make it slant from the mouth of the hive to the ground; the bees will run right up; you see them tumbling end over end in the grass, and they will run right up that block and be in the hive. It is movable; you can move it anywhere you please. You have to be careful and level it, or the hive won't set level, the same as with a wooden block, but it is a more durable stand; doesn't cost much, and will last as long as any. Mix it dry, one to five; stir it up dry, and sprinkle with a water pot and keep stirring it, so that you can get it up in a ball and squeeze it. When it is finished, you have a very hard block.

Mr. Huffman—I have found in using cement bottoms, that where I have had twenty-five or thirty that I didn't use, they make a very good sidewalk. My boy took a number of them and made a good sidewalk, so that they come in handy, to be used for something else besides a hive-stand. I think it best to make them in a solid block; I would not change from that; it answers the purpose very well; set it with a slope and the dampness doesn't bother.

Mr. Horstmann—I have made a lot of the blocks—about a hundred last year. I took an ordinary door, and then took a piece of 2x4, and made a kind of frame, and the cement, about four parts of sand to one of cement. Then take a shovel and shovel it right in and level it all off nicely. Leave these blocks stand about three days, until they harden; and they will drop right out by loosening the 2x4s from one end; set the block up on one end and you can move them anywhere.

You can give them a slant, and they will always be dry; they are handy in case there are any ants around; you can raise the block up and use a lot of kerosene, or any old thing, to put under that slab and make it uncomfortable for the ants. I call them "cement slabs," to take the place of hive-stands; you can make it long enough so in case the grass or weeds grow up, they can grow up in front of the hive, and won't go through the cement.

Mr. Holtermann—How thick are they?

Mr. Horstmann—Two inches; if you use them about one to four, or one to five, you can have them strong enough so that they will not break. I have made two different sidewalks with some of the blocks, and they make a No. 1 sidewalk.

Mr. Huffman—There is this about the mold: The man who made mine, made a platform to build the cement block on; then he simply unhooked the frame, and set it aside until it hardened, and went right on and made the next block of cement.

Mr. Horstmann—You must get the blocks hard enough to set thoroughly. I tried to take one or two out before they were set and thoroughly hardened, and they broke. A good many leave them in the mold three or four days—then there is no danger of breaking when you take them out. Make molds enough to last.

Mr. Huffman—How do you finish the edges after you take them out of the mold?

Mr. Horstmann—The 2x4s form the edge.

Mr. Huffman—They finish the sides the same as the top; make it perfectly smooth?

Mr. Horstmann—They will be perfectly smooth; just smooth the top off with a trowel. Leave them long enough so that they will be thoroughly set before you take them out of the mold, and they will be nice and smooth and hard, and the cost will be about ten cents apiece.

Mr. Baxter—I have had a good deal of trouble with hive bottoms; I have 2x4's parallel across with the entrance; the weight of the hive, when full of honey, causes it to settle in the ground, so that the bottom of the hive rests practically on the ground. Every fall I have to level them up so that all the water will run off; I have a good

deal of trouble. I have made cement blocks. My mold is hinged in the middle, so that after the block is made I can open the mold and take the block out. It keeps the hive up off the ground, and keeps it dry. I have had a good deal of trouble with large white ants, which practically eat up all the sap-wood in the bottom board. In having my hives pitched in that way, on cement blocks, I will not have the trouble in settling I had otherwise, and the 2x4's I give a coat of tar—hot tar—and it preserves them, and is good for keeping the ants away.

Mr. Baldrige—I made two or three of the cement blocks, but I don't make any more. I like the 2x4's, one under each end of the hive; that is all I need.

Mr. Hall—How many have used stands? I have made them out of a big trough; they make a very nice block, one for each end of the hive, after you have filled them; the moisture can't collect and the weeds can't grow up in them.

Mr. York—The question asks as to hive-bottoms, and not to hive-stands.

Mr. Horsemann—I don't think they would be practical at all for hive-bottoms; they would be too cold, especially in the spring time. I would not think of using them except as a hive stand.

Mr. Baxter—Besides that, they are too heavy. There is nothing like wood for hive-bottoms, and you want the bottom board loose, so that you can raise the hive at will, and wood is the only thing to use.

Side Packing for Hives in Winter.

"What is the comparison between air-space and chaff packing on the sides of the hive for wintering?"

Mr. Baxter—"The chaff hive is much the better. I have some chaff hives; we put 3 or 4 inches of chaff between the walls of the hives, with two $\frac{7}{8}$ inch boards, with dead air space of about 1 inch. When packing in the spring, we invariably find the chaff hive much the stronger; although they have one frame less of comb, the bees have more stores left, and they are ready to gather honey quicker than the others are.

Mr. Thompson—What do you find in the way of accumulation of moisture on the other part of the hive?

Mr. Baxter—I never have any; we

guard against that when packing in the fall; I had one experience one winter. When you open the hives in the spring, you will find them as dry as can be.

Mr. Thompson—Don't you ever find water running from the entrance?

Mr. Baxter—Sometimes, yes; but never an accumulation inside the hive; it condenses, falls on the bottom. I never find any ice when you unpack them in the winter time.

Mr. Thompson—Did you make any comparison between the chaff and the air space, and the amount of water that runs through the entrance?

Mr. Baxter—No difference. The amount that runs from the front of the hive amounts to almost nothing. In those very same hives, when unpacking, you don't find any moisture on the hive, only on the bottom board, and simply in front.

Mr. Huffman—Would that packing, according to Mr. Baxter's experience, be governed somewhat according to location; would that not have a good deal to do with it? I think in Wisconsin we have colder weather—more frost; I think under those conditions more ice would gather in the hives, and consequently more dampness; I think the locality has a good deal to do with the packing and outdoor wintering.

Mr. Baxter—Remember that the hive is a chaff hive. The packing I use is dry leaves inside the hive. I have a board which I move over from the west side of the hive—take out two frames and move it over so I can pack that side with leaves; I have telescope covers, 6 inch top, filled with leaves; that is inverted over the frames. I take the cloth away and put matting all across the top of the frames, then leaves on top of that; all the moisture goes up into those leaves and condenses there or escapes. I have a hole in the back end of the hive; the entrance is below in front; there is a current of air through there. If you remember the winter of 1884-85, that was a tester; that winter I engaged to teach school, against my best judgment, because a certain man promised he would come and pack my bees for me; I knew that he could do it all right, but something prevented him and he didn't pack them. I had three apiaries, one at home, and two out-apiaries; the one at home I packed

myself, on Saturdays, whenever I had the time, with dry leaves. I lost only two or three colonies out of eighty. You could examine them at any time during that winter and they were all right. During January there were two or three weeks at a time when the mercury never went above zero; and the same in February. Out in the country, where my bees were not packed, some I examined had sheets of ice, just like a pane of glass over the comb; with the result that where I had sixty-five in one apiary, I had twelve left in the spring. We had zero weather for almost a month at a time when the bees could not come out at all; I don't believe they came out from the January thaw until the beginning of March; where I had them packed in this way, they came out all right, and they will do that anywhere where they have good stores; the stores have a good deal to do with wintering bees. Packed in that way, perfectly dry, I believe they would winter in Wisconsin, in Minnesota, or anywhere where they don't fly once in six or eight weeks.

Mr. Cavanaugh—It seems to me a very important consideration is in having upper ventilation. I have wintered bees in Michigan; have tried to winter them in Wisconsin and am now trying to winter them in Indiana. There is one thing I feel sure of, in any of the experiments I have made, you have either got to have tight, sealed covers and plenty of packing about it, and keep that moisture in the hive below, or you have to have upper ventilation to carry it off. We have a form of hive down where I am located now, that has an air space, a double wall and a tight cap above, and several have reported to me having filled that cap with absorbent material, and the bees died. There must be an outlet for the moisture; even the hive-cover will be wet underneath without it.

Mr. Baxter—Right there I will say that some of these hives that didn't have a hole at the back, and that were perfectly water-tight, the leaves were as wet as they possibly could be when opened up; those bees didn't winter nearly so well as where there was evaporation. You have to get the moisture out of the brood chamber, because, if it condenses there, it will condense on the comb, and it will

freeze there, and your bees are going to starve then, if nothing else.

President York—The next thing on the program is the question of joining the National Bee-keepers' Association in a body.

Mr. Baxter—I move you that we join the Illinois State and the National, as we did last year.

The motion was seconded.

President York—It has been moved and seconded that we join as before, which was 50 cents to the National and 25 cents to the State.

Dr. Miller—I move to amend this by taking up each one separately for discussion.

The motion was seconded and carried.

Mr. Kannenberg—From our Secretary's report, we would hardly have money enough to send anything to the National, and to pay our dues here. We would have to make a larger assessment if we were to join the National.

President York—I might say, for the benefit of those who have come in since the reading of the Secretary's report, that we are about \$12.00 short; last year we also joined the Illinois State Association.

Mr. Baxter—A great many of us are members of the National, anyhow; it seems to me that this meeting is the most interesting and instructive of any held in the United States. Why can we not use our funds for this society? I think we owe our first duty here, to this Society, and I, for one, would vote against joining the National as a body. I think that our dues ought to be kept for this Society; the National will maintain itself. It is an interest we have individually, to help maintain the National; as a Society here we must look after our self-preservation; as to the National, each one should do it individually.

Mr. Moore—I am going to cast aside any delicacy in discussing the question. I am not a candidate for re-election. This year I shall receive no salary, which means six years I have served this association for love. I am not a candidate for re-election; I am going to talk to you on this subject of finance. A number have referred to the financial condition of this Society. There must be a reorganization of the financial condition of this As-

sociation will be out of business. You may say the Secretary has not been active enough, or he would have gotten more money. Last year we got in \$57.00. There was a deficit of \$12.45. Now you propose to join the National. I have made an estimate here. Out of one hundred people coming here, there are about seventy to seventy-five paying dues. Every one should pay his dollar. The Association can't live otherwise. Suppose that fifty would join and pay their dollar; that leaves a deficit of \$7.45. There won't be money enough to join this Association, by paying your dollar, and also join the National; we have got to face the situation. We have got to get in more money. I have tried to do everything I could.

Dr. Bohrer—I have been of the opinion, since I heard the report of the Secretary, that each organization would better be independent, and stand upon its own responsibility, and depend upon its own membership for support. If we were sufficiently strong, numerically, so that our funds would bear dividing between the two Associations, it would be different, but as we are coming out behind, we would better save what money we take in as fees and take care of our home affairs, and let any one who wants to join the National, join it; that is, allowing each organization to be self-supporting.

Dr. Miller—Can you find out what proportion of the membership of the National is from societies like this, coming in a body?

President York—I think I heard Mr. France say about one-half the total membership of the National.

Dr. Miller—I think that is an important matter. I believe the National is a power for good in the land, and if all the societies stand separately, we will cripple the National very much; it cuts it down half to start on. Across the water they have larger societies, a great deal, than we have here; it runs up into the thousands; it is altogether due to the union of the societies. Before we decide hastily to withdraw our part toward helping the National, we should do some thinking. Is there not some way that we can manage without it? I, for one, dislike very much to have it said that a society which holds meetings that are considered amongst the best in the land, should stand to the front and

support the National. The National has done quite a little good. It may do more good. I believe we would better do quite a good deal of thinking before we drop our membership in the National.

Mr. Kannenberg—I am in favor of that also. Why not make the dues \$1.50? Then we can join the National, even for that matter make it \$1.75, and join the National and the State Association as well. I would like to belong to the three. At the same time, I would like to belong as cheap as I can. In that way I think we can manage the three of them.

Mr. Moore—Last year quite a number paid \$1.25. I count here twenty-six who paid only \$1.00 (counting from book); for them the dues were taken out of the general treasury to join the Illinois State.

Mr. Huffman—I am not a member of this Association, and I am with Dr. Miller as to the joining in a body. Where would our National have been today as to numbers if it had not been for this one thing? We would not have had to exceed 2,000 members at a dollar a member. We didn't have over 800 at the time this thing was started. I, for one, am greatly in favor of this consolidation, getting more members for less price. By getting more members at a lesser price we would get more money, I believe; that has been our experience. I am not here to argue; you people do as you please, but I look at it like this: In our Wisconsin State Association the dues are 50 cents; then when Mr. France got to be Manager, he suggested—I believe our State was the first to join in a body—that we join the National in a body, and we did, and all the rest followed. What was the result? We have about 3,400 members today in the National, and it surely is a power for good, and I say, Let's all join in a body. I am here to join this Association, and give my dollar if I never attend it, and I am a member of the National. I want to see these Associations kept up, and a little money will help to do it.

Mr. Cavanagh—I have been getting a little bit warm under the collar. A business that will support a convention like this every year, and a National convention, and then talk about economizing on 50 cents to join the National! Let us not have a State

convention first; let us put the National first; then support our home State, too. There are several of us from other States besides Illinois. I think the first consideration ought to be the National. The National is doing things for us today that our State Association could not do. We ought to look at this thing in the right light. We should not look at it entirely in a financial way, that is going to bring us some gain in this year or next, but something that is going to uplift our profession. I don't think we ought to decide to give the National second place, but first place every time.

Mr. Kennicott—We had better stick to the National; keep that up. I think that we had better increase our fees, so that we can pay our Secretary; our Secretary does work enough to earn his pay, and he should have it. I would be in favor of making our dues for the State, the National and the Chicago-Northwestern, about \$2.00 a year, and keep it up.

Mr. Thompson—I would like to ask if this was not a concession on the part of the National, in our getting this rate, and if it is right that we should withdraw after the concession they have given us. I believe if we raise the dues to \$2.00, we will be short a good many members in the Chicago-Northwestern.

President York—Now, if we increase the dues to \$2.00, we are not gaining anything because of joining in a body; you can join the National in a body, for 50 cents; the National does not ask a dollar a piece when we join in a body, but 50 cents. This arrangement was made at Philadelphia National Convention in 1899. If I may be pardoned, I had the honor to introduce that resolution, that we allow local associations to join in a body. The first Association that met after that was the Wisconsin State, and they were the first organization that took advantage of joining in a body at the 50-cent rate. The next association was the Chicago-Northwestern. It seemed to be a good thing all over the country, and increased the membership of the National greatly. It seems to me we are not going to gain anything by increasing our dues to \$2.00. I believe \$1.50 would be enough.

Mr. Horstmann—I am in favor of raising the dues, but I don't think we

should raise them to \$2.00; if we raise it to \$1.50, we will have money enough to join both associations. We don't intend to give our Secretary a big salary, but I think we ought to pay him something. I think this matter should be laid on the table until tomorrow morning, and be taken up the first thing after the convention convenes. I will make that as a motion.

The motion was seconded.

Pres. York—The question is to lay this matter on the table until tomorrow morning, to be taken up as the first business; it is not debatable.

The motion was put and carried.

Pres. York—The other part of the motion was that we join the State Association in a body at 25 cents; that is before you.

Mr. Moore—I move that that part of the motion lie in company with the other on the table.

The motion was seconded, put, and carried.

Election of Officers.

Pres. York—We will now proceed to the election of officers. I will appoint as tellers Mr. Macklin and Maurice Dadant.

The election resulted as follows:

President, George W. York, of Chicago.

Vice President, Miss Emma M. Wilson, of Marengo, Ill.

Secretary-Treasurer, Louis C. Dadant, of Hamilton, Ill.

Address by Dr. Bohrer on Foul Brood.

Mr. President, Ladies and Gentlemen of the Convention:

I carry in my pocket a little Article of Agreement that was signed by myself and the Railroad Company, for which I paid \$25.25, to carry me to Chicago and return to my Kansas home, for no other purpose than that of attending this convention and hearing the deliberations of this body concerning the matter of foul brood and its treatment, and legislation in reference thereto. I made a trip, also, to Springfield, Ill., to attend the State convention there, for the same purpose. It might seem that it looks a little egotistical on my part—bee-keepers of Illinois may look upon it in that light, but I go, I intend to make it a point to go wherever that subject is discussed, until we get the proper legislation.

I have seen many classes of industrial people in this country grow up, and I have watched the progress of different industrial pursuits, and the kind of legislation being enacted in their behalf, and I find that no industrial pursuit has been overlooked or slighted as much as is the subject of bee-keeping, not only in the State of Illinois, but in all other States, and throughout the civilized world.

In European countries, the people went to work before their legislative bodies, in years gone by, and showed the importance of the bee-industry, and they received some proper protection. Here in the United States, we have next to none.

I was present at the first convention ever held in North America, in Indianapolis, in 1871, in the month of December; perhaps Mr. Baldrige was present at that convention, and served as secretary. The matter of foul brood was discussed, and ideas were gone over as to how the ailment should be treated. It was discussed there by a gentleman by the name of Rood, from Michigan. He gave us his experience in that convention, and the remedy that he regarded as being a cure.

It was to dig a hole in the ground, put straw or hay in it, or chaff, or something of that kind, in the bottom of the hole, and pour coal oil on it, and in the dead hour of the night set the hive in it, put on more hay or straw, and more coal oil, and set fire to it, and then fill up the hole. He said that was a perfect cure.

There was some reason for adopting that measure then, because movable-comb hives were scarcely known.

Nearly all the bees were kept in round logs and boxes of different kinds; they simply thought so long as they got their bees in a cavity of some kind, that was all that was necessary in that day.

But today we have a better method of treating it, and one that will succeed.

It has been charged, I understand, right in this city, that some of the manufacturers of bee-supplies are guilty of wanting a law passed in this matter of foul brood in the State of Illinois, in order that they might have an opportunity to burn up hives, that they might have a larger sale of bee-supplies; that they might sell more hives.

I think those statements are far-fetched, and a great mistake has been made, to make any such assertions as those.

I do not believe we have a bee-keeper in the United States who would advise legislation of that nature for any such selfish purpose. I can't believe you could find such a one.

But before we go into the treatment of foul brood let us ask, What is it, anyway? Well, it is a living organism, a little microbe, that multiplies with great rapidity; but what ushers it into existence we don't know anything about.

Dr. Phillips has made this statement, and Dr. White the same, and all who have been investigating the matter have made similar statements—we don't know what ushers it into existence; we know the remote cause of foul brood, but of the primary cause we know nothing; the immediate, exciting cause, we do not know; we do know that if honey infected with foul brood microbes is given to the bees, that are in otherwise perfect condition, they will contract that ailment immediately, and that it is incurable, that is, by the administration of any kind of drug or chemical, or any such sort of treatment that you resort to, you cannot stop the destruction of the brood or a perfect colony before infected going to destruction.

I think it requires a great deal of care and attention, and it is due to lack of care in conducting some of the methods of treatment of curing foul-brood that has led some persons to believe it is not curable. I heard a gentleman say in this city, that, treat foul brood as you may, it will reappear. I think that is a mistake, unless it is exposed to the same cause as started it in the beginning. I know very well that I have treated it in my own apiary, and it never got back into those colonies again, and it never will, unless exposed to the same cause.

I have been fighting it for about two years now. It was brought into our part of the country innocently, and we had to have legislation before we could do anything in the way of stamping it out. Some parties bought some bees, who were keeping bee-supplies, not knowing that they were infected with foul brood; they did not know anything about it. I was the first

one to discover it. A veterinary surgeon said to me: "I wish you would look at a colony of bees; they are doing no good." As soon as I opened the hive, I discovered foul brood, because there is an odor about it that if you ever get the scent, you will never forget; that is, American foul brood. European foul brood I know nothing about, except as I hear.

Different persons who purchased bees from this man had foul brood, and I told them so. We have a foul brood law in the State of Kansas.

The man who sold these bees came up to me, and said: "You are doing me a great injury; unless you take it all back, and quit circulating such reports, we intend to prosecute you." "All right, sir," I said. "I would like to have you do that right away, and if you don't, I will commence on you. I will prove, now that we have got the law on our side, that you have foul brood among your bees, and it has got to be cured."

Immediately I sent an inspector to his apiary, and he pointed out to him where the foul brood was. "You have not cured it at all; you have taken out those dead larvae, but it is a fact, which no one has a right to dispute, but what it is in the honey of that hive, and the honey has to be taken away, and the wax."

I make it a point not only to take both away, but to disinfect the hives completely.

As to the method of treatment: Mr. Baldridge has a system I like very much, if the bees were all of a size, and they never slipped past the bee-escape. I can save more brood by that method than any other, provided the bees don't go in there and come out again and carry the diseased honey into the hive you put the bees in that belonged to that hive.

He takes his hive and turns it square around, and all the bees that usually leave the hive, within a given length of time (I suppose it is about twenty-four hours), the bees that leave the hive will go out and come into the hive that you put on the old stand, then the young bees that hatch out, as they come out, you can turn them in, and the disease is undoubtedly cured, but we don't know when they get down; twenty-four hours may be long enough for all the bees to come out.

I have tried the McEvoy system and found it good. He takes the position that if the bees are put into the hive and given foundation, and shut them up in the cellar for, say from twenty-four to forty-eight hours, they will consume all the honey that is in the hive. I have put them in a new hive, and then have put coal-oil or kerosene into the hive and set fire to it, so as to destroy everything of living kind inside, and put them back.

I have taken the top bar door of the frame, leaving off the end and bottom, and simply fastened a strip to the top bar of the frame, turning the bees loose on that and let them stay there from twenty-four to forty-eight hours, and then take that away from them and give them sheets of comb foundation, and they will consume all the honey that may have been spilled in the interior of the hive.

One of my largest colonies got foul brood. To illustrate, I will put three chairs in position, to represent three hives. That gentleman represents one stand; here is the diseased stand, and here is another one, six feet away. I did not want to take it away from the apiary; that would have been the most satisfactory method of treating it if one could adopt it, but I could not at that time. Now here was this colony within six feet of it. I took the bees out, lifted the hive down by the side of the stand, put a new hive on it, and brushed the bees off; I kept the honey from going on the ground to prevent other bees gathering it up; I took the precaution of spreading a sheet down in front, so that every young bee would have an opportunity to crawl up that sheet into the hive. I brushed the bees off. I would not risk shaking them, because more or less honey would fly out and be scattered and the disease be spread; I didn't want to do that. I felt sure that almost every bee went into the hive.

Well, in about two weeks, I was crestfallen, to find that foul brood had crept into this hive (indicating), which hive had been entirely free before. What caused it? A bee or two went into that hive and carried some honey with it. I have made up my mind to this: The safest way to rid a colony of foul brood is to find some location remote from your apiary, and take that hive away, beyond the reach

of your apiary. It would be well to do this in the dead of the night; and you would be less likely of a possibility of its spreading. The foul brood that I had was pronounced by Mr. France to be American foul brood, and Dr. Phillips also said that it was American foul brood.

You have to be very careful and keep inspecting and watching carefully all the time; you may have to treat them the second and even the third time.

As for the comb. I put that into gunny sacks as fast as I cut it out of the frames, and burn the frames up. Some of the frames I would put in boiling water and boil them for half an hour or more. I don't know but what I will burn them up yet. Then I get kettles of boiling water, put the comb, sack and all under boiling water, and boil for thirty minutes before skimming. I understand these microbes will live from fifteen to twenty-five, or even thirty, minutes in boiling water; carbolic acid does not destroy them; nothing except to put them in hot water and boil them persistently for half or three quarters of an hour. I did all that, and, my friends, if that method will be adopted, and we will all use precaution and care, I think we will get along without any trouble.

We have to be careful and cut off every avenue of the bees getting into diseased honey and combs taken out of hives; to burn the frames up is about as sure a way as any; yet I don't think that need to be done every time. It is going to take some work to boil them and fix them up; I don't know but that I would as soon buy new frames as to clean up the old ones.

As to the kind of foul brood law you want: You simply want a law that will clothe a bee-inspector who is competent, one who knows how to discharge his duty, with authority to go on the premises of any man who keeps bees and inspect his bees, and if he finds the bees diseased, to put them under immediate treatment.

You want to have your law framed so as to allow an inspector to go on the premises of a man, whether he wants him to or not.

In many cases of diseased horses, the horse, to all external appearances, may be sound, yet a veterinary surgeon will examine the horse and prove

beyond question of doubt that the horse is diseased.

To allow an inspector to go on a man's premises and inspect his bees, only when the bee-keeper chooses, has to be dispensed with, and whether a man wants him or not, he must have the authority to go.

It is hard for a person to give up a family horse when it has been found diseased, yet I have seen one of my neighbors lose seven head of horses and mules, in order to get rid of a disease, and there was no way to do it, except to destroy the animals.

It is different with us; I don't believe it is necessary to destroy the bees or hives. I don't believe it is necessary if it is treated at the right time of the year.

We have a law in Kansas that reads that upon the petition of twenty-five bee-keepers in the county, a bee inspector shall be appointed, who must be known to be competent, and have proper recommendations that will insure that the work will be done. In our State the law is not operative only in part, in this respect. Many of our counties have not as many as twenty-five bee-keepers, so last winter we got a bill through the house, giving the nearest bee inspector jurisdiction in such counties.

In the matter of legislation, I have served three terms. One senator has some pet measure that he wants to put through, and because you cannot support him, he says he will not support you, and oftentimes your bill is lost in just this way. I don't believe that you have all had the experience I have in securing legislation. You want to select your committee; they did in Springfield; they selected a legislative committee consisting of twelve members, and I told them to select the very ablest men they had; the most intelligent and best informed in bee-keeping, men well acquainted, who knew the senators and members of the House, and in addition to that to request every member of the bee-keepers' association to say to his representatives, members of the House and Senate, that he wanted them to support a bill of that kind, telling them what we stood in need of in the State of Illinois. You have more members of the State organization than any other State in the Union; but that is perhaps not one out of twenty of the bee-

keepers in the State. I don't know how many thousands of colonies you have; the probability is you have from 250 to 300 thousand colonies in the State of Illinois. A great many men have nearly everything they have, invested in the industry of bee-keeping.

When the members of the legislature see your wants and needs, I believe they will be in favor of giving you the law you require. We have to let them know what our wants are.

You want an intelligent, capable legislative committee. If you have some men personally acquainted with your Governor, who will talk to him and tell him how important this matter is, and get him to say a few words in his message, that from time to time a sum of money has been appropriated in the State of Illinois, endeavoring to stamp out foul brood, but that without a competent bee inspector, clothed with authority to enter a man's premises, whether he wants it or not, it is not answering its purposes, it will be apt to get you what you want.

Oftentimes the senators do not give this any consideration, not that they mean any harm, but because they feel it is of little consequence.

When our bill went first to the Senate, one of the Senators said: "The idea of asking for an appropriation to clothe a man with authority to take dead bees out of combs." That was all he knew about it.

I remember when the first convention met at Indianapolis. I was requested to deliver the opening address. The then Governor of the State of Illinois came into the hall. I would have given everything I was in possession of if I did not have to make that address. There was the Governor of the State present to see me probably make a break down. I studied over the matter, and came to the conclusion that he probably could not tell the difference between a queen-bee and a horse-fly; that broke the ice; I delivered the lecture, and he sat there and seemed to be interested.

Governor Folk, of Missouri, vetoed our bill because he didn't know anything about it. I saw him, and talked with him, and I wrote him a letter, telling him that he had committed a wrongful act, having passed on something that he simply didn't know anything about. He afterwards approved

the bill, and they now have an effective law in the State of Missouri.

I believe you people can get it here. You want to have a strong Legislative Committee, and it is going to take a little money to support it. The men should go down to Springfield, and stay there two or three weeks, or a month, and get busy among those representatives and senators, and make them acquainted with your business.

Get the most influential members of the House and Senate to work for your measure, and I believe you will get such a law as you desire.

I thank you for your attention, and for giving me the permission that you have granted me to talk about this matter, because I feel very deeply interested in it.

I have reached a time in life when I cannot perform manual labor, and the ailments which I contracted while a soldier in the army drove me out of my profession.

I now keep bees as a pastime.

I believe there is money in the business if one have enough physical energy and strength to carry it out, and my own State of Kansas is going to be among the foremost States in the Union.

Curing Foul Brood.

"Did Dr. Miller, of Marengo, cure his bees of foul brood?"

Dr. Miller—Yes, I did. Now I am not going to take the time to tell all about my experience. I want to give a few points directly from experience, especially where something seemed new to me. You have literature on foul brood, and perhaps you are read up on it as well as I am. I want to say to you that if you have read as much about it as I have, you have read quite a good deal, but experience is something that is a little different sometimes from reading.

In the first place, the matter of shaking.

We are used to saying "shake" upon comb foundation, but we didn't shake, at least not more than one colony. Dr. Bohrer is right in saying that the way to do is to brush and not to shake. There is no use in scattering a lot of honey about. I don't know of any advantage that there is in shaking. I would brush the bees, always.

Allow me to say that if at any time I do not give exactly what you want,

or if I do not make any point clear, I will be glad to be interrupted by questions.

The orthodox rule is, shake upon foundation; shake first, put upon starters, and then leave that four days, and then shake upon foundation again.

Dr. Phillips wrote to me that for European foul brood he didn't consider it necessary to have more than the one shake, so I commenced shaking, as I told you; I shook one. (When I say "shake," I mean brush.)

I commenced upon the foundation, and a number of colonies were put upon foundation, and that worked all right—the cure was complete. There didn't come any more foul brood there, but there were some of them that deserted their hives, and I think there have been other bee-keepers who complain of that same thing. I didn't want that.

I may say that at this time there was a dearth; we had, two years together, a dead failure of the honey crop, and European foul brood. I don't know whether you think that is a good combination or not! So we thought we would give them something to eat, to help to keep them from deserting their hives. We fed some, and still there were some deserters. Then we tried another way.

We tried leaving one frame of brood in the hive, and not taking all away; taking what appeared to be the cleanest we could find in the hive. We put the one frame of brood at the side of the hive. I want to tell you what things we did; you may find something in it that will be of use to you.

We put the one frame of brood at the side of the hive. Next to that we put two empty frames; when I say empty frames, I mean just what I say, empty frames; not even the slightest starter of foundation in them.

In the course of perhaps two or three days, we would find on one of those empty frames (and seldom was there more than one of them used), a little comb built, and some eggs there. When we found that, then we took away the foul brood frame at first that (then we filled up that foundation). At first we took away that frame that had a little starter in it, as quick as they made a start in the foundation, but afterward we didn't even do that, so that nearly all of

them simply had the one frame taken away after they made this little start I told you about; then filled up that foundation, and they were left in that way. Not one that was started in that way showed a return of the disease.

We didn't disinfect the hives in any way, or do anything towards disinfecting the hives; we used them straight along. If a super was on the hive where the colony was treated, we left that super on with whatever little honey might be in it.

As I told you before, it was a time of dearth; therefore, there was not much honey there, and any feeding that we did (I told you that we fed them), we did that, in most cases, by putting a section or two of honey down in the hive, and generally that was a section of honey that had been taken from a diseased colony.

Now, I don't know that it is any proof at all. I believe that the disease is carried in the honey, but if that proved anything, it proved that, at least in some cases, they don't carry the disease.

The time of day is the next thing that comes.

The rule is—the orthodox rule—"Shake in the evening after the bees have stopped flying."

With 70 or 80 diseased colonies in the apiary, that would be troublesome, as you will readily see. Moreover, if we did the work just at the evening (as this was a time of dearth) there would be robbing going on even quite late in the evening. We preferred the time of day when the bees would be at work. You know that even in what we call a time of dearth there will be a little part of the day when the bees will do a little gathering. We worked at them when we thought there would be the best chance against robbers, and if at any time the robbers put in an appearance, we stopped it, so you see we were not orthodox in the matter of time of day, but took rather the time of day when we thought the robber-bees would give the least trouble.

That is about all I know about the method of treatment, unless there is something I have forgotten or omitted.

Mr. Lathrop—Why do you think European foul brood is worse than American foul brood, when you could cure it so easily? I don't think you could

cure American foul brood as easily as that.

Dr. Miller—I don't believe that European foul brood, as it was in my apiary, is as bad as American.

Mr. Moore—What is the other name for European foul brood, is it black brood?

Dr. Miller—Yes, in New York State it was first called black brood.

Dr. Miller—I was asked to try the Alexander treatment, and after having thrown perhaps, I think, 57, on foundation, I did make some trial of the Alexander treatment. I may say what the Alexander treatment is; it is very simple. Mr. Alexander said, make a colony strong; make it queenless; leave it queenless for twenty-one days, then give it a young laying Italian queen; that is all; that made the treatment.

Dr. Bohrer—For American or black foul brood?

Dr. Miller—For European or black foul brood.

Dr. Miller—Mr. Alexander, if I remember rightly, said he thought that that would cure American foul brood, too, but his experience was with the European.

Now, the first part of that I think is not emphasized enough: Make the colonies strong; there is no use in fooling with the Alexander treatment at all with a weak colony. If you want to do anything with it at all (and I may say right here, I succeeded with the Alexander treatment with some colonies, and with some I didn't)—but if you want to do anything with that, the first and foremost thing is, you must have strong colonies.

We made the colony queenless; in ten days we cut out the queen-cells, and gave (now here is a departure from Mr. Alexander's treatment, and I consider it a very important departure)—after the colony was queenless ten days, cut out the queen-cells, give it a virgin queen of best stock—and that is all. After the colony is queenless ten days, cut out the queen-cells, give it a virgin queen of the best stock! Make the colony strong (don't forget that!) Take away the queen in ten days, destroy the queen cells, give it a virgin queen—and the bees will do the rest!

It would perhaps be all the same if instead of giving that virgin queen, you should give it a queen-cell. Pos-

sibly it would be all the same, if you would leave one of their own cells there and let them rear a queen from that; but the point is this: After a colony has been queenless for about two weeks, it becomes discouraged, and you keep it then queenless for another week, so that it has been entirely queenless for three weeks, and that is a rather discouraged colony, and it will not work as hard to clean out as one in better heart, and I believe the giving of that virgin queen when the ten days are up is something that is very important to help them to do the work of cleaning out the disease.

Right here I may say, that there were cases in which we found very little of the disease, and then perhaps a week or two later we would look and would find the bees had cleaned it out themselves. You may perhaps ask: "Could you tell very readily if there was very little in one or two cells?"

Yes, it is not very hard to find a single cell in a whole colony. You know that the brood, when it is well grown, is of a pearly white, and if the European foul brood is there, it is cream color—yellow—and you will spot it very promptly.

Take a frame that is diseased, you may not smell a thing about it. If a whole colony is diseased, you may hold your head over it, and you may get something of a smell; but there is not such a smell as the smell of American foul brood.

If we left them there, with a very little of it, the bees would, in some cases, clean it out themselves.

Now, I am not so sure that there is anything I have not told you about. The question might be asked now: "Would you prefer the Alexander treatment or the McEvoy treatment, as it is called?"

Well, there is a division of opinion at our house. Miss Wilson, my assistant, as we were coming in today, and discussing the matter (I don't know that we had ever discussed it before), but I said: "If I had it to do over again, I would use the Alexander treatment more than I did." And, with her usual Scotch determination, she said: "Well, I wouldn't." (And I don't suppose she would.)

Mr. Macklin—Well, by the Alexander method, the honey is left in there;

the bees may clean out the cells of the dead larvae, but is not the honey there to carry the germs of the disease to the new queen that is put in?

Dr. Miller—Possibly it would be in some cases, but I do know this: Those frames that they cleaned out—we used them afterward where they were clean, and it didn't give the disease there. I don't know. (I am entirely candid in saying I don't know.) It is a question: Would they not carry the disease in the honey? But they didn't.

Mr. Macklin—It may crop out next year.

Dr. Miller—That is true.

Dr. Bohrer—You took the honey away from them?

Dr. Miller—No, whatever honey was there, was left there.

Mr. Thompson—What was the final condition of the larvae that the bees carried out—dried—in scale form?

Dr. Miller—No, it does not dry down. I may say right here, I would not have any faith at all in the Alexander treatment with American foul brood, because American foul brood dries down in dried scales right tight down to the cells, and the European foul brood does not. They can take them out, and you will see little black pieces of dried-up larvae at the entrance of the hive.

A Member—Does the larvae straighten out in the cell?

Dr. Miller—I don't know. I think, in that respect, it is different from American foul brood—you will find that sealed over. I think we didn't have very many cases when it was sealed over, although I know we had some queen-cells sealed over with the European foul brood. I want you to note three things about that in all that I have said: We are talking about foul brood—European foul brood. That American foul brood might be entirely different. And this was (another thing) at a time of dearth, and that may make a difference.

It has occurred to me that, possibly, in a time of dearth, there might be, in some respects, a good deal of advantage, because, in these cells they wanted to clean out, if there was a rush of honey, might they not pile in honey that had some dead scales? And another thing: It is very easy to crow and say: "Oh, yes, I am all

over with it." But wait until next year; it is not next year yet. Even if it should come next year, that would not prove whether the treatment was bad or good, for I suppose the disease is all about me, scattered here and there. There is the hopeless case in the whole thing, that it is scattered all around. The disease is here and there, and I can't help myself.

Now, no matter what view I have had before, if I have buttonholed any of you, and begged you to oppose legislation about foul brood, I want to take it all back most thoroughly now. I am thoroughly converted to the idea that we need legislation of the strongest sort about foul brood, for this thing may keep on for years to come. Three or four years ago it was within a radius of twelve miles of me, and now it is there, and it is all around me, and if it reappeared with me, I could not tell whether it was because the treatment was bad, or because somebody else around me has gotten it. I wish I could say it in some sort of an eloquent way, that it would get into your heads, and make you feel how much we need the help of legislation.

A Member—You would not want it again, would you, Dr. Miller?

Dr. Miller—I did have just one comfortable thought. When I found it in the first place (I suppose some of you would say I must have been very stupid to let the thing go on so far)—but I tell you we didn't have any legislation on the matter of spraying, and there was a good man who sprayed his trees, and for the last three years we thought at that time that the bees were poisoned by the spraying, and so we concluded that it was all right. But this year I sent a sample of it to Washington, to Dr. Phillips, and he wrote back—and he tried to do it in a gentle way—and told me we had **European foul brood.**

You don't know how I was taken back. I am not the most despondent person in the world, but I felt the bottom had dropped out of everything when I learned I had foul brood in my apiary. When I had a chance to take a second breath, as I commenced to tell you before, I took a little comfort in it, and I said: "We are going to have a lot of fun fighting it, anyhow." I am not so sure but I would

like to have one or two cases to practice on in the future, but I don't want a whole lot of it like that again.

Dr. Bohrer—Did the bees become discouraged, as in the case of American foul brood? Did they lie about the entrance, in a despondent, crestfallen manner?

Dr. Miller—I don't think so. Mr. Smith, the State inspector, came and looked things over, and he said: "Oh, you haven't foul brood bad; it is not bad; it is just a little naughty." But I don't know as to comparing it with specimens of American foul brood; I should say it was not very bad. There is another thing that is important to be considered: It may be that the disease was not so bad there as it is in many other cases.

President York—We have had two talks on the subject of foul brood—some real experiences—now for the paper written by Mr. C. P. Dadant, who was invited to prepare a paper on "Legislation Needed, and How to Get It." Mr. Dadant was elected President of the Illinois State Bee-Keepers' Association at Springfield, two or three weeks ago, and he is very much interested in this question. Secretary Moore will read the paper.

Needed Legislation and How to Get It.

The Secretary asked me to write a five-minute paper on the above subject.

I know of only one question of legislation now agitating the bee meetings of Illinois, and, if I judge, by the last meeting of the State Association at Springfield, it is the foul brood question.

I believe the State Association has taken the proper method of beginning the work on this subject for the next session of the legislature. They have elected a committee of twelve members on legislation. This committee is to keep active until the Legislature meets.

How are we to get the needed law? By a continuous action and a united effort among the bee-keepers. More States are passing laws on this subject every year, and sooner or later Illinois will fall in the ranks of the progressive ones. It is in this as in the matter of spraying. It has been easier to secure a compulsory law on spraying in the young States than in the old ones. The result is that they

succeed in producing sound fruit in those States that enforce the spraying laws. But although Illinois is one of the most progressive and one of the best, if not the very best, producing of the States, it has not felt the need of compulsory laws until it found itself distanced in the race by younger communities.

That we will succeed, whenever we go at it with a will, is not to be doubted.

If the Chicago Northwestern Association is as enthusiastic on this matter of legislation as the Central Association of the State has shown itself to be, let it also elect a committee of twelve or more to act in unison with the committee of the State Association, and let it be composed of men who are determined to work for the good of the cause without a rest until a result is secured which conforms with our all but unanimous desires.

Petitions should be circulated and signed by bee-keepers all over the State. These petitions should be put in the hands of influential politicians in the Legislatures, for politics and bee-culture must for once join hands.

If you fail, do as before, try, try again. There is not the shadow of a doubt about your ultimate success. The ignorant or ill-intentioned opposition will sooner or later fall before you like a straw before a blaze.

C. P. DADANT.

President York—Now, we have had the two talks, and paper of Mr. Dadant, and it seems to me that we might as well finish up the question this afternoon. We will then throw open the question for discussion by the members of the Association:

Dr. Bohrer—The doctor called attention to the matter of not taking the honey away from the bees, in the case of European foul brood. Don't ever risk anything of that kind in the case of American foul brood, and don't use a comb that has ever been in the hive that has been occupied by bees diseased with American foul brood. If there happens to be one particle of scale or dead larvae glued fast to the bottom of the cell that has been infected with foul brood, sooner or later you will find that it has been spread; don't ever risk not taking away that honey from the bees. What honey I have on hand, I have been trying to think how to use it. I can't get the

idea out of my head about digging a hole and putting it away from the possibility of the bees ever reaching any of it. If I give it away, some neighbor may use it on his table next spring, and the bees may get hold of some of it and scatter it.

I believe in using the utmost care and caution in everything around your apiary that has been infected with foul brood. I use carbolic acid, but it is more of a superstition than benefit, as I understand that carbolic acid does not kill the germs.

I believe in thoroughly washing the hands and scraping the nails. I change my clothing, and put my clothing in boiling water. By being vigilant, we may be able to master the situation, and having the proper laws to help us in the work. If you will make it unlawful for a man to allow a beehive to stand on his farm, that would be well; he must take the bees out of it; not allow them to build in the trees. Wherever bees are out from under the care of the bee-keeper, we want a law to make the people destroy them; otherwise they will make mischief.

Mr. Moore—I wish to make a motion that the President appoint a committee on Resolutions, of five, to express the sense of this convention on this question.

The motion was seconded, and carried.

President York—What about the recommendation of Mr. Dadant in his paper? He recommended that a committee of twelve be appointed to co-operate with the committee of the State Association.

Mr. Moore—I move that a committee of twelve be appointed to co-operate with the committee of the same number appointed by the State Association.

Dr. Miller—It is not a question whether so large a committee is advisable in this case. In the case of the State convention, there are quite a number that are right close at hand there. I don't know whether it would really be objectionable; it seems to me twelve is a pretty large number.

President York—The committee appointed at Springfield, I think, covered the State fairly well; they were pretty well scattered over the State; then an Executive Committee of three out of that twelve was selected.

Filling Combs With Sugar Syrup to Feed Bees.

"What is the best way to fill empty combs with sugar syrup to feed bees?"

Dr. Miller—I am not sure that I know the best way. I will tell you a way that I used quite satisfactorily some years ago. I had a box made, in which I could lay a comb flat in the bottom of it, and then, somewhat elevated, I had a dish; I think it was a baking powder can, with a lot of holes made in the bottom of it with a nail; that can was hung at a height so that anything falling out of it upon the comb would fall, perhaps, three or four feet; then, taking another vessel with a spout, I poured into this can, and moved it about, so that the syrup would fall in a spray all over it.

You will find, if you take a comb and pour the syrup over it, it will just run off; it won't run in; but letting it fall at a distance in fine drops, it goes into the comb. It has to have force enough to force that syrup into the cells into the bottom. I have also filled combs by pouring, but the spraying I find more speedy, and it gives the necessary force, the same as gravity does in using a can with holes in the bottom. The only object I had in having this elevation was to have it go with force.

Mr. Cavanagh—Would a large box, sufficiently large so that the comb can be suspended from the bottom, and a spray pump, do the work pretty well?

Dr. Miller—The main thing in having the elevation was to get the force, but I should suspect, with that force pump at three inches distance, you might make it work all right. Did you actually try it?

Mr. Cavanagh—Yes; three inches would be rather close.

Dr. Miller—It would not have time to spread into drops—that is right.

Mr. Cavanagh—A couple feet away; or a foot away, anyhow.

Mr. Thompson—After they have the syrup in the combs, I would like to know if the bees take it out.

Dr. Miller—They will in my locality. I have had a large experience in feeding syrup in combs. I fed—I was going to say—tons, more than a ton, anyhow, in that way. When the comb was filled, then it was set where there was a chance for a little drain—not very much—when it was put in the

hive. Do you mean to say you have bees, and you put comb in there, and they won't touch it?

Mr. Thompson—They will clean it up, but not take all the honey out of the cells.

Dr. Miller—That is quite possible; some times they will clean it up and fill the cells; put more in than you have in it. If you get them to fill that up, and clean it up, and still there is room in it, you can spray it again. If they keep filling it in with some comb—what more do you want?

Mr. Thompson—If the bees handle the syrup, it is all right; it would not do for winter stores, as a rule, as you prepare it.

Dr. Miller—Yes, I had some combs melted, put in that way.

Mr. Huffman—I handed in that question; I wanted to see what experience others had. I believe I can give you a better remedy. Take a can full of syrup; hold the comb at an angle of about 45 degrees; take a dipper and pour that syrup over the comb, and you will fill every cell, invariably; turn it over on the other side, and do the same with that; go around the edges, and in less time than I am taking to tell it, you can fill the comb. Then have a place and let it hang there, and let it drain, and you have your combs filled as well as the bees can fill them. I filled hundreds of combs in that way; but, of course, you should feed in the evening, when you won't excite the bees to robbing.

Dr. Bohrer—Do you advise giving feed to them that way at night?

Mr. Huffman—Always, especially in the spring of the year.

Dr. Bohrer—I notice that some do their feeding of bees at all hours of the day; it is much better, I think, to feed them at night; then the bees are better to clean up and have things in better shape in the morning. A pepper-box feeder is a good way to feed bees when they are weak. Turn the mouth right down over the cluster, and do that at night; put a warm cloth all around it; keep the bees down below, and pour the syrup in the comb. I usually take a pitcher and let it run as small a stream as possible, and it will penetrate the cells, and not run over. Many times it will run over the top of the cells and not fill half of it—have it run as small a stream as possible. To do it

at night is the best time to keep the bees from robbing.

Mr. Cavanagh—In regard to robbing, Dr. Bohrer has brought out this point: We can't always feed at night in our out-apiaries. I never had any trouble in feeding syrup. The principal thing is not only to keep the robber bees out, but to keep the bees in the hive from rushing out.

Dr. Miller—If you want to avoid robbing, it is a good plan to use the Miller feeder, and then you can feed at any time of the day—morning, noon or night.

Dr. Bohrer—Did you ever know the bees to leave the hive at night, after they are fed at night?

Dr. Miller—Oh, yes; I have seen them quite late in the evening fly out.

Dr. Bohrer—After night, would they crawl out of the hive and fail to get back?

Dr. Miller—I believe they would all get back.

Dr. Bohrer—I spoke about this matter to a gentleman at Springfield, and he said he did not like to feed at night; he said his bees would go out of the hive at night and fail to get back. That is a new experience to me. I never observed anything of that kind.

Shaking to Cure Foul Brood.

"Is there a more profitable method of treatment of the European foul brood than the orthodox shaking methods?"

Dr. Miller—Answering that more fully, perhaps, than I did before, I don't know about it. I am inclined to the opinion that the Alexander method is more profitable than the shaking method, because when you shake on the foundation you are weakening that colony a whole lot; at least it was so with me this year. I am talking about a season of dearth; if there was a big flow of honey on, it might not be the same thing. Although there might be some failures with the Alexander plan, I believe I would rather have some failures, and do it over again, than the cost it would mean to have everything thrown onto foundation. Of course, as I said before, I don't know, but I believe if I had it to do over again, I am very confident I would do more with the Alexander plan than I did before.

Mr. Holtermann—I would like to hear from Miss Wilson.

Miss Wilson—Well, I don't think I would. I would rather be sure when I got through. I do think it is hard to treat them that way when there is any honey coming in, but I think if there was a good flow of honey, it would not put them back nearly as much as when there was a dearth. I don't like to have to do it over; I want to be sure they are all right.

Mr. Lathrop—Dr. Miller didn't say, in his talk, that he destroyed the combs in the first place, but I suppose he did.

Dr. Miller—I didn't mention that; I melted them up. If I had it to do over again, I would not do it. That is one of the things against Miss Wilson's way of doing; she is a reckless, wasteful sort of creature!

Miss Wilson—That depends—if you have to treat them twice, and then melt up the combs!

Mr. Horstmann—About six or seven years ago I was treating foul brood in my yard, and tried all kinds of plans. I tried to save the combs, and the more I tried the worse I got; so I took the McEvoy plan, and cleaned the bees right out; put them on starters for five days; put them off from that, and on full sheets of foundation. Last year I had another little dose of foul brood, but I think it must have been different from what I had the time before, because there was one colony in particular, I noticed last year, which I pronounced having foul brood, and several of the bee-keepers did the same thing, and last spring it came out all right, and there was no sign of foul brood. There was one colony in particular that was badly affected with foul brood, and I cleaned them out. There must be different kinds of foul brood. I knew this was a case, because I sent a sample to Washington, and had a report come back. If you have the genuine foul brood, I believe the only way to clean it out is to take the McEvoy plan, and then you will clean it up with one job.

Dr. Miller—Was that American or European foul brood?

Mr. Horstmann—The foul brood I had some years ago, I had a report from Dr. Howard, in Texas, on it. I know the foul brood I had the last time was nothing like I had the other time. I fooled with that a couple of years; finally I adopted the McEvoy plan, and cleaned it out.

Mr. Moore—I have had experience three seasons with foul brood, and I will have to go against Dr. Miller. Don't let Dr. Miller lull you into a sense of false security. Don't you think for a minute, if you have foul brood, that you have the easy kind—black brood, that you can fool along with and get rid of it—for you will have to adopt drastic measures in the end. Whenever you get anything in the way of foul brood, you put it down right there and then that you have American foul brood, and treat it in the most drastic manner you can. It is a discouraging thing to go right through all your hives and think you have got rid of it, and the next time find you have it in your apiary. I am dead against treating it in any way but the McEvoy treatment. Melt your combs up, if you please, and save them. I did that, but that is a foul job. The fumes that come up from that melting beeswax is enough to poison a person, and it is a serious thing.

If you can get the foul brood out in one season, do it, and don't think any labor is too great, because when it goes over into the next season, and the next, and you lose twenty or thirty colonies, you will wish you had done some burning up.

Mr. Macklin—I was talking with Mr. Stewart; he has four or five hundred colonies, and he tells me he has not destroyed any frames, or anything about the hive, during the last four years. When he discovers foul brood, he takes the whole thing and sets it above another healthy colony; first he moves it to a new location. He puts it on a healthy colony, without the queen-excluder between, and he claims that the bees below go up there and clean it all out, and some times the queen goes up there and lays, but foul brood never appears again. I know his bees have had American foul brood, because I have been in his apiary and examined it, but it does not seem possible he can cure it in that way. I meant to say that during the last four years he has not destroyed any combs; he says he thinks he has the thing under control.

Mr. Holtermann—I would like to speak a word right here. A man from Canada came to me—a bee-keeper of a good many years' experience—and said he had experience with foul brood

a good many years, but he said that he had practiced the plan of Dr. Miller. When the combs were pretty well cleaned up, he dipped them into a strong solution of concentrated lye—sprinkled it well into the combs. After that stood there about twelve hours, he took the combs and washed them with a hose thoroughly, and shook the water out and let them dry. He said he never had a case where the disease came back. It is worth your trying, and won't cost you anything to try it, and save your combs, possibly. I can bring his card here in the morning.

Dr. Miller—I would like to know how many here have had experience with European foul brood?

(A number raised their hands.)

Mr. Moore—Allow me to tell some of the rest of them that they might as well get ready for it, for it is coming.

A Member—As to the matter of frames, we destroy no frames where we cut the combs out. We built a fire out-of-doors, and took a big iron kettle and filled it part full of water; put in some concentrated lye, and put the frames down in that. When the frames were well rinsed with water, we used them again all right.

Mr. Wheeler—Will concentrated lye eat up the wax?

Mr. Cavanagh—It seems to me we are going at this thing wrong end to. Dr. Miller has not, but some of the rest of us. About treating with the McEvoy plan, we know that materially weakens the force of our colonies. With European foul brood, we must keep that colony up in A No. 1 shape all the time. I had a little experience the past summer, and the very poorest results I had were on the McEvoy plan of treatment. I tried some of the Alexander methods, and am well pleased with them. I have also treated some with the modified Baldrige plan.

The McEvoy shaking plan is all wrong, because it weakens our colonies. My reason for thinking that, is this: I shipped a lot of bees, last spring, into a location that was diseased; bees all around diseased. Probably there are few who have had this experience.

The lot of bees I shipped in were healthy when I shipped them in. They were mostly Italians—some black. There were two yards combined in the apiary I speak of. One yard had honey-dew left from last fall, and for

that reason, weakened by poor wintering; the other yard wintered well, and the colonies were strong.

I would say, from a conservative estimate, that I lost at least three times as many colonies of bees that had been weakened—at least three times as many showed disease as those that were not weakened. All had the same chance.

The point I want to bring out is this: A colony that is weakened through poor wintering, or lack of pollen, through any cause whatever weakened, will develop European foul brood just about three times as quickly as a good, strong, healthy colony.

You have to keep your bees in good, healthy condition; get a good, hardy Italian, and rear a queen every year. Then use your treatment. I don't advocate letting it run. It is very contagious to colonies that are side by side. The hives close to each other in a row will spread the disease more than by robbing. We know that it is communicated in several ways besides robbing.

Dr. Bohrer—What kind of foul brood?

Mr. Cavanagh—European entirely—not American. Now, as to brushing: There is a very important point. The method of transferring the bees from a diseased hive into the empty one, and, of course, as well as keeping the colonies up, we must treat them along the best methods.

The methods I would prefer would be, in the clover flow, say, in June, to use the modified Baldrige plan of treatment; that is, use the bee-escape between the empty hive and the hive above, giving the queen a small starter below, letting the bees go down through the bee-escape. While I have not tried that out fully, we have neighbors near us that have, and reported a complete success. This must be done, however, in a good honey-flow.

Another way is: Brushing them out, which leaves the problem of disposing of the brood. In brushing the bees, I would not brush them outside of the hive. We work them any time of day, but always in a honey-flow. We set the body containing the colony, above the empty hive, and if we have ten frames and no division-board, we remove the comb and put it under cover, and then take a brush right

down in between those combs, and brush the surface next, beginning on the side of the hive next to us. Then we brush both sides of the next comb, and so on, continuing through the whole eight or ten combs; it doesn't take long.

Dr. Bohrer—Do you regard European foul brood as being as hard to deal with as American?

Mr. Cavanagh—Indeed I do. If American foul brood is properly treated, it is easier to get rid of. European is a flighty kind of a disease—about the time you think you have hold of it, you have not. I destroy all combs that have brood in it.

Dr. Bohrer—How do you disinfect them?

Mr. Cavanagh—I should not consider it necessary to disinfect them, where they have no brood in them, in American foul brood; simply to have the honey clean.

Mr. Kannenberg—How do you detect the European foul brood?

Mr. Cavanagh—The European foul brood can only be detected in the early part of the season; when it shows at this time of the year, it would be impossible to detect the European foul brood, unless some bacteriologist got it. In the early part of the year, European foul brood is detected by dead larvae; usually there will be some that will be blackened in the bottom of the cells; some times they will lengthen out almost ready to cap, and the bees will hesitate to cap them, and they die and crawl up in the bottom in a black scale; a little later in the season they usually just settle down in a shapeless mass; some times in the upper part of the cell, and some times in the lower, and are often light in color. As the honey-flow advances, the bees begin to clean them out in the early stages; finally, if there is a real heavy honey-flow, it will disappear entirely; of course, as the flow advances, the bees will crowd down the line of brood and cover up the cells that have formerly been diseased, and the brood that is left will show perfectly healthy; but it will be there next year, from the fact that the honey is there.

Here is the advantage of the McEvoy treatment at this time of the year: The disease has disappeared, but the honey is before that brood, and if we

can take those bees now and shake them onto healthy honey, we are rid of the disease, because there is no disease possible; it is all kept up in the hives that have the European foul brood—that is, late in the season.

The scale in European foul brood is not at all like the American foul brood. In European foul brood, instead of going down to a little tiny black scale, it is usually larger, and lies there in plain sight.

Mr. Kannenberg—Is there any bad odor attached to it, as in the American foul brood?

Mr. Cavanagh—If there is any, it is only when the bees are so badly discouraged that they leave that brood scattered all through the cells; leave it until has become decayed in there. Of course, any brood that is left long enough will take on a bad odor; but nothing like the American foul brood at all. I have treated several cases where the bees were completely discouraged.

Mr. Kannenberg—You cannot detect it by smelling in front of the hives?

Mr. Cavanagh—You can in advanced stages. Another point is to Italianize everything with golden Italians; better than leather-colored. I find the golden Italian three-band are very much immune to the disease. Mr. DeMuth, our inspector in Indiana, told me a great deal about his experience; he has been fighting it for several years, and has not got it cured, because it has been all around us. He tells me that he has had combs where the brood has hatched out, and has not even made them queenless; and has used the combs again after they have been cleaned out, without a recurrence of the disease. He tells me, also, that he has used unfinished sections from colonies that were diseased, in feeding for the winter, and that that colony took the disease, which shows that at times we have the disease carried into the super.

Mr. Thompson—Can you describe the odor?

Mr. Cavanagh—I don't know as I can think of any comparison.

Mr. Thompson—Any comparison to a colony that has died in the winter?

Mr. Cavanagh—No. In the modified McEvoy treatment is the problem as to what to do with that brood, which is very valuable in getting other colonies in shape. In the first place, I

would never treat a colony, if I could avoid it, that was in a discouraged condition; I would either destroy that colony utterly as a colony, or I would pile at least two supers of brood on top of them, and get them strong first. Don't shake a weak colony; they will never do anything if you do. In using the modified McEvoy treatment, that is, in putting the brood above, and starting them below—in using the shaking treatment, we use that brood over the weak colonies that are diseased, and, in so doing, we get that colony very strong, so that they will stand shaking in their turn.

Dr. Miller—Mr. Cavanagh said that the colony should be very strong; now, I said that before he did. I am glad he said it. I want to say it again, and emphasize it—the colony should first be made strong! If there is any one thing I believe is important, it is making the colony strong. I suppose you take a weak colony and pile up three or four stories of brood upon that, the bees will be comparatively weak in taking care of them, and you think you are making it worse when you pile it up that way, but you are not. There was one colony that I had, that was not bad; it happened to be No. 100; I piled up four stories on that, and those four stories that were put on, at the end of three weeks' time seemed to be all right; and more than that, the colony below the excluder was all right and clean. Somehow the idea of having a lot of bees encourages them. Just a word about the character of the queen: I don't know; Mr. Cavanagh may be right about that. Mr. Alexander says to give them vigorous young Italian queens. I had the hybrids. I think it is correct that those vigorous young Italian queens are the right ones to use, because they are the best kind of queens. If it is vigor you want, if you have the golden Italian queens, they are more vigorous than anything else, and are the ones to use; if you have black bees more vigorous, then use the black bees. Still, I am inclined to think, as a rule, that the Italians are very much better for cleaning out foul brood, and I guess there is something in it. I am not sure but that there is something about European foul brood that affects the queen herself. Did you ever notice anything of that kind, Mr. Cavanagh?

Mr. Cavanagh—No, I never did.

Dr. Miller—It seemed to us that the queen appeared to be logy, and in some of those that were thrown upon foundation, the queen disappeared entirely.

Mr. Cavanagh—Yes, I had quite a little experience in that, in weak colonies especially, the queen disappearing.

Dr. Miller—It seems to affect the queens themselves. If you ever find anything like disease in your hives, the first thing you do, send a sample to Dr. Phillips, at Washington; he is one of the nicest men in the world, and he will treat you kindly. He will make you think you have done him a favor by sending him a sample. If you ever are in trouble with European foul brood, see that you make all colonies strong.

Mr. Baxter—I have had no experience with foul brood. I don't know anything about it. I am here to learn. I have studied the question for a long time, and have gathered all the information I could. I have talked personally with men like Mr. McEvoy and other foul brood inspectors, and I find that there is a great difference in opinion. I know that my bees never had foul brood, unless they had it year before last. I had one colony then that showed the symptoms. It was a hybrid colony, half black, half Italian. I called up my brother-in-law, Mr. C. P. Dadant, and asked him if he would come up and examine it. He was very busy at the time. The colony was very weak; it was going down, weakening all the time, and it showed all signs of foul brood. I did not give it a golden Italian queen; I gave it a leather-colored one. Inside of two weeks that colony had no more signs of foul brood. Mr. Dadant did not come up, and that is the last of it I have seen in my apiary.

The question with me is as to what is the best method to pursue in the treatment of foul brood. One says dig a hole and put your hives in and burn them; another says, leave the honey in; another, that the germ is found in the honey—and all kinds of things. The more I study this, the more puzzled I get. Since I have been sitting here this afternoon, I know less about foul brood—as to how I should treat it—than I did when I first came here.

Mr. Holtermann—I would like to ask

Dr. Miller whether he had all sealed brood, or was the larvae and brood mixed?

Dr. Miller—You mean those diseased combs? Took everything just as it was.

Dr. Miller—Mr. Cavanagh, can you detect it as to color?

Mr. Cavanagh—Yes, where the larva is not straightened out yet, a great many times it will show a cream color, and sometimes they will die before they straighten out; the color is noticeable; they will start to turn cream, and then brown, and then almost black; it is different; there is nothing regular about it; it works different in one hive than in another.

Dr. Miller—I am not sure that I ever saw anything straighten out—in my locality—but it is very easy to see the difference between pearl-white and yellow-like.

Dr. Bohrer—One other method was spoken of; about making colonies strong. Nearly all the colonies that I ever treated for American foul brood I find weak. I always adopt this rule. As soon as I know they are on safe ground, that the disease has disappeared, I put them on comb foundation the second time; then going to a strong colony, get the brood just hatched from cells and build them up with that. The comb foundation must be entirely free from disease.

Swarm From a Foul Broody Colony.

"Will a swarm cast from a foul brood colony develop foul brood the same season?"

Mr. Cavanagh—Sometimes it will, and sometimes it won't. As a rule, no; we saw several instances this year where we were uncertain. Mr. De Muth called my attention to the fact that we should not pass those colonies without examination.

Mr. Macklin—I asked the question. I have kept a record for a good many years. Where I have found a colony with foul brood, frequently I have traced it into the first swarm, so that since I have discovered that, when I have a swarm, I immediately go to the colony from which it came and examine it to see if it has foul brood, and if it has, I put the new swarm on starters and leave them there three or four days, and then put them on full sheets of foundation, and I have been able to keep track of them, and keep it

down; I go back and treat the old colony.

Mr. Baxter—Can a foul broody colony cast a swarm?

Mr. Holtermann—Oh, yes, right along.

President York—Perhaps I would better appoint those committees.

First, the committee of five on resolutions: Mr. Moore, Mr. Horstmann, Mr. Baxter, Mr. Huffman, and Mr. Cavanagh.

Legislative Committee.

The committee of twelve on Legislation: Mr. Baxter, Mr. Lyman, Mr. Macklin, Mr. Thompson, Mr. Winter, Mr. Horstmann, Mr. Kannenberg, Mr. Moore, Mr. Baldrige, Mr. Kennicott, Dr. Miller and Mr. Grabbe.

"Pure Extracted Honey."

Should the words, "Pure Extracted Honey" be stamped on tin cans when they are made?

Mr. Moore—I have sold extracted honey for twenty-four years or so, and I want to enter an emphatic protest against the words, "extracted honey." People say they don't want "extract of honey." They say they want "honey." I think it should be "honey separator," or "slung honey"—anything but "honey extractor."

Mr. Thompson—Where have you sold honey for the last twenty-four years? What kind of people can your customers be?

Mr. Moore—For twenty years in Chicago; I have sold honey in Logansport, Ind.

Dr. Miller—You object to the name, "extracted honey"—what would you call it?

Mr. Moore—Slung honey, liquid honey, separated honey, clear honey.

Mr. Huffman—I think if Mr. Moore is going to change the name of the honey, he ought to change the name of the extractor; call it "solar extractor."

Mr. Moore—It doesn't matter what you call it for you folks, but it does to people in the city, full of superstition and distrust. Extracted honey doesn't mean anything to such men. Call it "pure honey," or "liquid honey," or "clear honey," but don't use the word "extracted" on your tin cans, or labels, or on anything.

Dr. Bohrer—Pure honey covers the ground. They are putting up a good

deal of chunk honey—comb honey in cans; you might stamp that "Chunk Honey." That means not only it is honey, but that the comb is in it. The word "extracted" means nothing; all you want is pure honey, if you are putting honey on the market.

President York—It seems to me that simply "honey" is enough.

Mr. Holtermann—What will we call the strained honey, taken from the extractor?

Dr. Bohrer—Call it pure honey.

Mr. Holtermann—Some think extracted honey is manufactured honey.

Mr. Moore—They say to me: "I don't want any extract of honey!"

Mr. Thompson—I would like to know why we should not let our agitation for foul brood protection drop, if people are not familiar with it; this would be the same as to say we should drop the extracting business at this late hour.

Mr. Moore—No, you are mistaken; you must give these people who don't know anything about it, a name they will understand, that will count for something. This foul brood agitation has to do with bee-people, but the name "extracted honey" goes before people who do not understand, and it is very material, in putting honey on the market for sale, to give them something that will mean to them the article they want to buy. The word "extract" comes on jars, and a large number of people would think that it is extract of honey.

Mr. Horstmann—I don't think you could get a word that would be better. On my cans, "Pure Extracted Honey" is pressed on the lid, and when people get that, they know what that means, if they know anything, and if they don't, I will tell them. I have pure comb honey and pure extracted honey. I might have pure candied honey, if they want it, but the words, "Pure Extracted Honey," are all right, I think. I would like to have a vote on that.

Mr. Holtermann—I appreciate Mr. Moore's position; we have men in our community who think because it is extracted it is not pure honey; they wonder what "extracted" means. I think the word "separated" would explain it more quickly. I don't like slung honey; I would suggest the word separator, and dispense with the word extracted; people are full of supersti-

tion even in this late day; they are distrustful, and are not familiar with the pure food law with regard to honey.

Mr. Moore—This word "imitation" has been used so much to avoid the operation of the pure food law, and these people in the cities think the extracted honey is an imitation of the real thing. You have to take people as they are, and give them what they want; you have not the time to educate them.

Mr. Thompson—The proper way to educate them is to give them good goods, and they will not ask you if it is the pure honey; the goods will speak for itself, and they will know.

Mr. Kennicott—If you say "separate," there are many ways to separate honey. Honey is extracted honey coming out of the comb.

Mr. Moore—The public say "strained honey."

Mr. Baxter—Simply speaking, is not honey taken out of the comb extracted? They are both extracted—extracted from the comb.

President York—If you call it separated honey, some people might think it ran through a cream separator!

Mr. Holtermann—Most people call it strained honey; it is all strained, anyway!

Mr. Winter — They ask me for strained honey, and I give them strained honey.

Dr. Miller—The English language changes from time to time, and sometimes it takes a long while to make a change. A word comes into use, and after it becomes a fixed expression, it is a very difficult thing to change it. Now the words "extracted honey"—that is the name that that has gone by for a long series of years; if you called it slung honey, or extracted honey, or separated honey, it would take years to have the public know what is meant; they know extracted honey. It is called extracted honey thousands of miles from here, all over; now, if you talk until midnight, and say it ought not to be called extracted honey, it will be called extracted honey tomorrow, and the day after, just the same, and you may as well let it go at that, and try to do something that you can do.

Mr. Lyman—The fact was this year I did not have any pure extracted honey to put into cans; all my cans

were labeled pure extracted honey; I prefer a blank can, and label it as I like.

Feeding Syrup in Cold Weather.

"Can syrup be fed to bees successfully at this time of the year (December)?"

Dr. Bohrer—Yes, I have done it lots of times.

Dr. Miller—Yes, I have, but I won't do it again.

Sour Extracted Honey.

"What is the best thing to do with sour extracted honey? Is there a market for it?"

Mr. Arnd—Make vinegar out of it.

Dr. Miller—Feed it to the bees in the spring.

Mr. Arnd—After you boil it and skim it, it will sweeten somewhat.

Mr. Holtermann—It will spoil the flavor.

Heating Honey Before Canning.

"Should extracted honey be heated before putting it into cans or barrels?"

President York—How many think so? Everybody voting, votes against it.

Dr. Miller—That depends upon whether it is candied or not.

Do Moved Colonies Do Better?

"Why is it that colonies closed up and removed several miles in the spring always produce more honey than colonies not so removed?"

President York—If they do, you should remove your colonies.

Dr. Bohrer—I don't know whether that is a fact or not.

Mr. Huffman—The location has something to do with it.

Mr. Baxter—That is an old question of mine. I have had that up before conventions for the last ten years, and it has never been satisfactorily answered. It is a fact they do, and bee-keepers here last fall conceded that was a fact. I removed an apiary of sixty-five colonies last year, to a poorer location than they were before, and a poorer location than my other apiaries, and the sixty-five colonies produced more honey than any of those in a much better location that had not been moved. It has been my experience invariably. Why do they do it?

Mr. Cavanagh—The "shook swarm," as they call it, they claim is the same

as to remove colonies; it riles them up; it stirs them up. You take a man who changes his business location—why, he goes to work "like a nailer" to make everything go fine for a while. I think it is just the same with a colony of bees. The psychological effect in a case of that kind strikes the same as it would a human being.

President York—I believe Mr. Cavanagh has moved around; he certainly is making a success where he is now!

Bees in Winter Passing from Frame to Frame.

"Is it advisable to confine bees on frames in winter without a space above, so they can pass from one frame to another?"

Mr. Baxter—No, it is not.

Dr. Bohrer—To avoid anything of that kind, I used to bore a hole in the combs; take a stick and bore it through the frames from about an inch and a half to two inches of the top-bar, so that they can pass through from one comb to another. I have had colonies starve to death by being kept in one corner or one end of the hive.

Dr. Miller—I think it is generally understood there should be a passage from one comb to another over the top-bars, but I question whether it is always necessary. Suppose you have a colony clustered down below the bottom-bars, what do they need of a passage above?

Mr. Cavanagh—The Doctor brought up a point in line with my experience. If a colony of bees is warm enough, they don't need any other passage. I used to pack them in cases like Ira Bartlett uses. Now I never give them any provision to get from one comb to another, and I never lost a colony yet. If it is not warm enough so they can get around the comb, they must have a passage through or above it.

A Member—I would like to ask Mr. Cavanagh what he has over the top of his frames? Covered with burlap?

Mr. Cavanagh—A quilt, usually; sometimes burlap.

A Member—You winter out-of-doors?

Mr. Cavanagh—Yes, sir.

Mr. Baxter—I can't afford to go to that trouble in packing my bees; another man and myself packed eighty colonies in five hours, and if I had to go to work and get that paraphernalia

together, I would not be able to take care of my bees; with those double-walled hives and mats that I use, it is very easy to pack them quite securely, and in such a way that they will winter well. We know that the bees in winter-time will eat from below up. When it is twenty degrees below zero, how are they going to get over to the other combs unless they can go above? You take the temperature of a hive of bees in cold weather, the heat is from above and they have to go over above if they get over at all. Lay a small stick of wood one-half inch in diameter over the top of your frames; they get over that just as easy, from one frame to another; you have everything in a nutshell, but done quickly and securely. I would not want to take care of a lot of stuff to cumber up the workshop.

Mr. Cavanagh—The point is, with those cases I speak of, there is heat enough; so that the bees can go around behind the combs if they want to; they are warm enough so that they can go anywhere they want to; those bees are comfortable, no matter how cold it is. I don't advocate that kind of a case, although I used them at one time.

Mr. Baxter—To make the most money with the least expense is my motto, and I want to do away with those things that require a lot of work, and get results; that has been my aim, always.

Dr. Miller—And what does Mr. Baxter use?

Mr. Baxter—I take a little piece of wood—a stick about one-half inch in diameter; lay it on top the frames; put the mat over that, and leaves on top, and the bees below, with space between.

Dr. Miller—There is locality again. I don't want to be bothered with that stick; he has too much paraphernalia for me! I don't want to bother with picking up that stick; my bees are hanging down in a cluster below. It is locality, I tell you!

Mr. Baxter—I can winter mine, thirty degrees below zero, and have done it, out-of-doors. I have colonies in hives that have stood for thirty years on the same spot.

President York—We had one convention member who said he had the same bees he had thirty years before!

A Member—I agree with the doctor; I don't want so much paraphernalia around as Mr. Baxter has. A chaff hive is rather handy, but it is too heavy to lift around.

Mr. Baxter—I never lift them.

Mr. Cavanagh—We run for extracted honey.

Mr. Baxter—I produce extracted honey. There is nobody here who gets more pounds of honey per colony. I reported here in this same convention in 1883, forty colonies had thirty-three barrels of honey—600 pounds per barrel.

Mr. Cavanagh—The point I want to call attention to is that the doctor said the locality had a lot to do with it. I have made so many different experiments on wintering this year. The man who helped me pack the bees, I said to him: "Now, if there is another single way we have not tried to pack bees, I want you to help me to think of it." We packed them in bunches of eight; we packed them singly; we made some with closed entrances; we used tar felt; we made little holes so they could look out; we left other entrances open; in most cases we packed those bees in boxes of eight, that is, four with their backs together. I am not ready to report on these experiments as yet. I don't think the chaff hives would do for my system of management.

Mr. Baxter—Don't you think that would be a bad way if you had your entrances to the east or west or north?

Mr. Cavanagh—I would as soon have them to the north.

Mr. Moore—My brother has bees; he bought chaff hives at an expense of \$400, but he will never do it again. He starts with a floor about a foot from the ground; puts saw-dust between the hives; over the whole he has a cover, a metal cover, absolutely storm-proof; he can pack his bees at much less expense than the expense of a chaff hive; he leaves them out year after year; he can put probably three supers on each side. He runs for extracted honey exclusively.

Mr. Holtermann—Does he leave them that way in the summer?

Mr. Moore—Oh, yes.

Mr. Baxter—I don't want people to understand I advocate chaff hives. I had those hives; I happened to get a certain number of them, and I have had them ever since. At first they



LOUIS C. DADANT. Secretary,
Chicago Northwestern Bee-Keepers' Association.

were chaff hives with stationary bottoms, but I have cut them down now so I have single-board bottoms, so I can raise them up and give the bees some ventilation. The question was asked this afternoon, I believe, in which hive had they wintered the best. Those chaff hives cost a little more than the other hives; I have double-wall, two sides 1-inch stuff. I have saved in the last twenty-five years, with those hives, even if they cost more, I have saved more in the work, two or three times over, than if I packed this other way, and have as good results; they have made me more money.

Secretary Dadant.

Mr. Moore then introduced the new secretary, Mr. Louis C. Dadant.

Mr. Moore—It seems strange to me to get out of this position. I am really greatly gratified to be able to shift my responsibilities on such good shoulders. I take great pleasure in introducing Mr. Dadant, who will take charge of the secretary's and treasurer's work.

Mr. Thompson—I think we all appreciate the work Mr. Moore has done for the association. If we have nothing more to offer Mr. Moore, I would move that we give him a rising vote of thanks.

Dr. Miller—There was a man who said today that Mr. Moore might have perhaps done more to get members into this society—I think his name was

Mr. H. F. Moore, that said it. I doubt very much if any one would have done more than he has done to get members into the society.

The motion was seconded and carried unanimously.

The convention then adjourned until 7:30 p. m.

FIRST DAY—EVENING SESSION.

The meeting was called to order at 7:30 p. m., with Mr. York presiding.

President York—We have one paper to be read this evening, written by Mrs. H. K. Beard, of Pennsylvania. I will ask the secretary to read it.

"Fruit and Honey—Can What You Can."

(By Mrs. H. K. Beard.)

There is no mystery or luck about the canning or preserving of fruit. If properly done, failure is almost out of the question. The fruit or vegetables should be barely ripe, never over-ripe, perfect of their kind, or at least with no fermentation started in them, and the sooner they are taken from tree or garden and sealed up in jars the better. If particular about keeping the fruit in shape, or where a large amount is to be done at once, it is usually put uncooked into the jars and covered with the honey, and the jars are then set into a large boiler, with a perforated rest under them, to keep them from the bottom. Fill the boiler with

cold water nearly to the shoulders of the jars. Screw the tops on rather loosely, put the cover on the boiler, and bring to a boil. The steam helps to cook the fruit or vegetable, and the tops of the cans being on, the drops that form on the inside of the cover can not get into the jars. If the lid does not fit, lay under it a thick cloth to prevent the steam from escaping. When nearly done, tighten the tops on the cans.

These general directions fit both fruits and vegetables, but the latter are, as a rule, more difficult to keep than fruit, and require much longer cooking. Berries, cherries, and plums should cook about 15 minutes from the time the water begins to boil around them; peaches and pears from 20 to 30 minutes.

Currant preserves, which are believed to be the finest of their kind, as follows:

Take out the seeds with a needle or tiny embroidery scissors; take the weight of the currants in honey, and when this has been heated, add the currants. Let it simmer a minute or two and then seal, as for jelly. The currants retain their shape, are of a beautiful color, and melt in the mouth. Care must be taken not to scorch the honey.

Cherries—Take 6 quarts of fruit, one and a half quarts of honey. Measure the cherries after the stones have been removed. Pit them or not, as you please. If you stone them, be careful to save all the juice. Put the honey in the preserving kettle over the fire until it simmers. Put in the cherries and heat slowly to the boiling point. Boil 10 minutes. Skim carefully.

Strawberries—Take equal parts of honey and berries. Simmer the honey so as to have the syrup thicken almost like jelly before adding the berries. Boil from one to two minutes.

Raspberry Preserves—Twelve quarts of raspberries require two quarts of honey. Put two quarts of fruit in the preserving kettle and heat slowly on the stove. Crush the berries with a wooden vegetable masher and spread a square of cheesecloth over a bowl and turn the crushed berries and juice into it. Press out the juice and turn it into the preserving kettle. Add two quarts of honey and put on the stove. When the syrup begins to boil, add the remaining 10 quarts of berries.

Let them heat slowly. Boil 10 minutes, counting from the time they begin to bubble. Skim well.

Pears, peaches, and plums take equal weight of honey and fruit. Plums should boil about 15 minutes. Pears and peaches from 20 to 30 minutes.

Blackberries, huckleberries, and raspberries—Take 4 quarts of fruit and one quart of honey, boil 15 minutes, then put in jars.

Rhubarb—Do not peel it or it will look green. The color is a nice pink, if not peeled. Two quarts of rhubarb, 2 quarts of honey, boiled to thick syrup, then sealed.

Corn—Two quarts of corn cut off the ear, one pint water, one-half pint of honey, 4 even tablespoonfuls of salt. Boil 30 minutes, put in cans, and seal.

Corn and Tomatoes—Three quarts of corn, 3 quarts of tomatoes, one pint of honey, one-half pint of water, 6 tablespoonfuls of salt. Boil one-half hour.

Apples and Quinces—Equal weight of fruit and honey. Boil 10 minutes.

Fruit juices, grapes, cherries, raspberries, strawberries, peaches—Simmer the fruit, then strain through a cheesecloth, take one quart of fruit juice and one-half pint of honey, boil from 10 to 15 minutes.

Manheim, Pa.

President York—We might hear from the ladies on the use of honey in canning and preserving fruits. We will be glad to hear from any of them as to what their experience has been.

Miss Wilson—We make a good many honey-cookies at our house, and like them very much. We canned a few cans of fruit, strawberries and raspberries, with honey, and they were good.

President York—Good enough to eat, were they?

Miss Wilson—We thought so.

Mr. Baxter—I will say that jelly and jam made with honey is free from the tartaric acid. You know grape jelly or preserves, after they get to a certain age, are full of tartaric acid, and if it is made with honey instead of sugar, it will avoid that. That has been the experience of my wife, and I know she used honey in preserves, too. It makes nice preserves. She uses it very generally in cooking.

Dr. Miller—Does Mr. Baxter mean in the grape preserves, there were none of these crystals at all?

Mr. Baxter—None of those crystals at all.

Dr. Miller—That is something new, because those crystals are very unpleasant.

Dr. Bohrer—My impression is there is little, comparatively, known about the use of honey for culinary purposes. I know that fifty years ago it was not fit, not prepared in a state that would admit of its being used. The nearest to absolutely pure honey you could get was what they called "strained honey." That is, it was pressed out of the comb and was strained through a cloth and there was so little of it, it was never used for cooking purposes; but the time has come now, when, if the ladies of the country will use it and experiment with it, almost anything can be done with it that can be done with sugar or syrup. That would be my impression about the matter. But it has been so little used that I don't blame the women for not talking about it, because very few of them have tried it but very little.

Mr. Burnett—I would like to ask Dr. Miller, in his opinion, what the properties of honey are in this matter of removing tartaric acid, or its results. Is it because of the fact that it is turned to the left instead of right, in the process of fermentation?

Dr. Miller—I don't know, but I suppose there is more or less of a chemical combination, that the honey combines with the acid. You know if you take sugar, if you make sugar syrup and put an acid with it, it will not granulate. Now something the same way here. I don't know just how it is. I cannot give you a satisfactory answer. The combination is made in some way. I only got the fact from Mr. Baxter, and I am willing to take his word for it, that with the honey it does not form those granules, and I know that is a common thing with a jelly made from grapes, or any preparation from grapes, you have the acid crystals. That is the way they make cream of tartar.

Feeding Sugar Syrup to Bees.

"Is sugar syrup better feed for bees in winter than honey?"

Mr. Bull—It is just about as good. There is very little difference between honey and sugar syrup.

Mr. Fluegge—It may be better than

most honey. If you have the best kind of honey, I suppose it would be just as well. I think the syrup goes further, the same amount, and not liable to give them any dysentery if handled rightly.

Mr. Huffman—I didn't use to think that sugar syrup was good for bees, and I wouldn't try it. But two years ago last fall I took five colonies, after the honey season was over—our honey season the last of June or middle of July is all over with. I shook them on empty foundation, and fed them nothing but sugar syrup, half and half. I used the Miller feeder, and I never had bees winter better in my life. I would rather have it than honey, but sometimes you don't get the good article. Last winter, especially in the middle part of the State, a good many had to extract their honey. If you have a sugar syrup, you don't need to fear any trouble. That is my experience.

Mr. Cavanagh—I think it has been conceded by some others that bees consume less sugar than honey. It is less stimulating, we know. And I always feel that the less the bees find necessary to consume during the winter wants, the better they should winter. For that reason alone, I would say that sugar syrup would be preferred.

Dr. Miller—I think there is quite a little we don't know about bees, and that matter of sugar and honey is one that I think there is a chance for us to know more about than we do. There are certainly some cases in which it is a very great advantage to get rid of the honey that is present, and to put sugar syrup in its place; but where the honey is of the best character, there may be some question. In Europe, I think, the general opinion is that it is much better to have honey. In this country, I think the general opinion is that sugar is the better. They claim that if, for any considerable length of time, you feed sugar your bees will become weaker constitutionally, that there is food in the honey you don't get in the sugar. This much is certain, that in honey you have more or less pollen, where you don't think you have, where you don't see it, and when it comes to rearing a brood in the spring, then you have the support for the brood in the honey that you don't find in the sugar. So

all of these things should be considered, and I am inclined to believe, on the whole, where there is good honey, take it year in and year out, we are better off to stick to honey. And yet I don't know.

Mr. Wheeler—I have had a little experience in different kinds of honey for wintering. I lived out in Dr. Miller's country one time, where we had white clover honey, and some other flowers, and I thought at that time there was nothing better than sugar syrup to winter on, but since I have come to Chicago, and winter my bees on sweet clover honey, I would not change sweet clover honey for sugar syrup, any time. It is a great deal better than any other kind of honey. Pure sweet clover honey has very little pollen in it, and the bees will winter well on it, and breed well in the spring. The thought that struck me at the time Dr. Miller was talking was, it is strange the kind of honey we people like so well does not keep the bees so well. It does not seem to be as healthy, for some reason. Sweet clover honey, people don't take to, but the bees invariably winter well on it.

Mr. Baxter—Besides that, I don't want to have the name of feeding my bees sugar syrup, unless there is less reason. A year like this, when we have so much honey-dew, I might feed sugar syrup in the fall, but if I had good white clover honey, or good Spanish needle honey, it is good enough to winter anywhere.

Temperature to Prevent Honey-Granulation.

"If 160 degrees is the temperature to heat honey before sealing the bottles, how long should it be held at this temperature to prevent granulation?"

Mr. Arnd—I have never had any bottled honey that would not granulate.

Mr. Cavanagh—I would like to ask Mr. Arnd if he heats the caps or tops, whatever he has on his bottles. If the entire bottle, in other words, is brought up to 160 degrees in sealing?

Mr. Arnd—I don't keep it at any regular temperature. I bottle the honey when it is hot.

Mr. Cavanagh—You bottle when it is hot, but there is a little air space there when it is cool and the tops—do you heat them, too?

Mr. Arnd—No.

Mr. Cavanagh—I think there is a

fault in your bottle. The entire bottle, and air-space, should be kept at the same temperature. I would not say it never granulated; I have had good success heating the bottles and heating the caps, because if the bottles are not heated, there is a space above the top of the honey, that when the honey is poured in at 160 degrees, the honey will not bring that air-space up to the proper heat. May be it does not have anything to do with it. I am talking of clover honey in Michigan.

President York—How long should it be held at a temperature of 160 degrees to prevent granulation?

Dr. Miller—I have seen a great many times directions for heating it to that point, and sealing it up, and I never saw anything said in connection with that as to the length of time to hold it at that temperature. So that I have always supposed it was not necessary to hold it for any length of time. There may be something in that. The point that Mr. Cavanagh makes is simply the difference between 160 degrees and something less than that, because the cold top, of course, will cool off the honey, when it is not raised to the same temperature.

Mr. Arnd—Mr. York, what do you say about it? You have had as much experience as any one.

President York—I don't remember that we ever kept the honey at 160 degrees for any length of time. We never heated the bottles. There may be something in that, because if the bottles were cold, it would cool the honey off much quicker. I should think that might help, heating the bottles and sealing it up quickly.

Mr. Cavanagh—I would like to ask, when you have the honey candied, when done for the market, haven't you had any experience in melting that, without opening the bottles, and then sealing up, ever notice whether that honey candies again or not? Doesn't that remain liquid almost indefinitely? I mean taking honey that is candied and liquefying it in bottles. You do that sometimes?

Mr. Arnd—Yes, very often, honey that comes back, we heat it.

Mr. Cavanagh—Does that ever candy again?

Mr. Arnd—Oh, yes.

Mr. Cavanagh—As badly as it was before?

Mr. Arnd—No, I don't think as badly, but it will candy.

Mr. Brown—A man who lived in Kentucky told me he had a good deal of experience in putting up honey, and he says that after you have heated it, it does not make any difference about when you put it into the jar. If it has once been brought up to proper temperature, you can let it get cold if you desire, and then put it into the bottle. At least, he didn't have to keep it up to that particular temperature, but he says the act of heating it really gives it the property of remaining liquid. But I have always considered that he lives in Kentucky and there is a possibility that if that honey was as far north as we are, it would not stand. He claimed it would stand down there.

Dr. Miller—I know it would not work in my part of the country. You heat it up and make it liquid and it will candy then the second time quicker than it did the first time. I think the sealing may make an entire difference in the cause. And with regard to the question as to whether when heated in a jar, after it has been sealed, it might make a difference as to the way the thing was treated there. For instance, you might unscrew the cap, heat everything, and then screw it tight. That is one thing. You might heat it with the cap screwed tight and leave it that way, and that would be another thing. Do you get the point? Because there is the explanation of that air in there, whereas if you unscrew the cap and heat the whole thing and then screw it up, you have a vacuum in there you don't have if you heat the whole thing without unscrewing it.

Mr. Cavanagh—The doctor spoke of heating the honey without unscrewing the cap. I had some that I heated that way and the caps went up in the air.

Mr. Thompson—I have liquefied a good many bottles in that manner and never had one to break yet; if the heat is put on slowly and brought up to the required temperature to liquefy.

Mr. Cavanagh—I can't say as to that. These were tight Mason jars and I suppose they must have been air-tight.

Dr. Miller—Possibly they went beyond 160 degrees.

Mr. Arnd—About a year ago I had a man working for me that was con-

nected with a large bottle concern in Detroit. They made a specialty of bottling honey in glasses, and the way they did it there, and he claimed it kept better than any other way, they heated up the honey and kept it at a temperature of 160 degrees for a short time. They filled the glasses, and when the froth came on the top and it got almost cold, they put on the caps after it got cold. And he claimed that they very seldom had any granulated honey come back. Of course, I have not tried that, but they allowed the honey to get cold, with a little froth on, before they put the caps on.

President York—I would like to ask Mr. Arnd if he knows what kind of honey they were bottling?

Mr. Arnd—They called it Michigan White Clover.

President York—Where they bottle sage honey, that might be. I saw some the past few weeks, and the sage honey does not granulate very quickly, anyway. It will not granulate in California for two or three years.

Mr. Burnett—It differs about that some. Some years it will candy in a few months, and sometimes it won't candy for two or three years, according to the testimony furnished me.

Is Foul Brood in Extracted Honey?

"Does foul brood get into the extractor? If so, is it marketed with the honey?"

Mr. Fluegge—Impossible, because we don't market any brood.

Mr. Brown—I think he is mistaken there. That is just where it does get in, is right into the extractor. Especially by the inexperienced. That is something that ought to be guarded against above all things. I know of one extensive bee-keeper who lives in Chicago. He makes a practice of owning one extra extractor in reserve, in case foul brood he might get, and then he uses that extractor for foul brood treatment only, and never lets it come in contact with any hive that hasn't foul brood.

Mr. Cavanagh—There is quite a distinction between germs of foul brood and foul brood itself. There is nothing injurious to the human system in the germ of foul brood, as I understand it. I am in pretty deep water, talking about bacteriology, but foul brood does not get into the honey unless—unless they put it with foul brood comb, and

that is not a common custom among bee-keepers.

Mr. Huffman—For instance, a comb that had a little foul brood in it, and that brood would all hatch and you didn't know it, and you put that in the super and let it fill with honey, wouldn't that germ be in there and condemn that honey? And when you extracted it and put it into the honey, and people buy the honey and get diseased? How did they get it? There is some way the disease is transmitted. Now, I would like to have it explained how it is done. Parties will buy honey and feed it, and get foul brood, and how do their bees get it unless it comes in contact with something that is affected? The germ is there. People that don't know what foul brood is, are very apt to do that, and I don't see any other way, unless that comb had foul brood in it, and that hatched out, and yet it was used for honey.

Mr. Baxter—They mean the germ of foul brood.

President York—Of course, the question does not mean whether it is the brood that gets into the honey. It means the germ of foul brood in the extractor. If it gets in, it is marketed with the honey; no doubt about that.

Chunk Honey.

"What about chunk honey? Can its production be made profitable in the North?"

Dr. Miller—I think that question should be changed. Texas people don't like to have you talk about "chunk" honey. It is "bulk" honey.

President York—All right, call it bulk honey, then. Has any one here tried it? Bulk comb honey, as they produce it in the South, is cut out of combs and put in cans and filled up with liquid honey?

Mr. Huffman—I did years ago; but I didn't know any better. (Laughter.)

Mr. Burnett—I had some of it in that form at first, and also have had the producers here and they explained, or endeavored to explain, to us the advantages of it in the market. They said, "We have cut the combs out and poured the extracted honey into it to preserve the honey," as they speak of it, to preserve the comb. Now, I think that is like a good many other things I don't know enough about, but we do know that where people are accus-

tomed to using things in certain ways, they like it better that way than they do prepared in other ways. As a matter of fact, we were not able to sell that honey in this market, other than to people who would take and melt it from the can and run the wax off.

Mr. Winter—I have, to a limited extent, cut up some combs and put it in cans along with the extracted honey. It makes it look nice, and as it came near cold weather, I kept it on account of the granulating, you see? Then how would that be with those pieces of comb, and how would comb be when it melted?

President York—I was hoping Mr. Scholl might be here from Texas and tell us all about this. They work it down there, and make a success of it.

Dr. Miller—Thirty or forty years ago, there was on this market and all markets all through the country, jars of honey with a piece of comb in the center. C. O. Perrine & Co. at that time were large dealers, a large concern in Chicago, and they put it on the market. If you see a nice section of honey, if it should happen to fall into a dish of liquid honey, you would think we had spoiled it to some extent, and it looks unreasonable to believe that anyone would want nice comb honey all mixed up with the sticky liquid honey. And when it is talked about we think of it as something that could not possibly be desired, and yet men of intelligence, successful bee-keepers, especially in Texas, tell us, and we cannot dispute it, that they find a fine market for it. You know very well you can produce a large sheet of honey with less trouble, and more of it, perhaps, than you can to have it divided up in sections, and they can sell it for just as much as they can a section of honey, and that is what they say—men of such character, you cannot dispute them. Now, the question is, whether there is something about the climate there that the people want it, or whether it is a matter of education. If it can be done here, and it can be thrown on the market or sold as it is there, there is something that northern bee-keepers might gain by it. It does not look to me that it could be introduced in a lifetime, or that people would want it, and yet they sell it right along down there, and there is a bigger demand for it



J. J. WILDER, of Georgia.

than any other kind. Now, what is the matter that we cannot do anything of the kind here?

President York—Before we go any further, we have an article on this very subject by J. J. Wilder, of Georgia, and I will ask the secretary to read it. It will come in right along with this very question.

Chunk Honey—Its Present and Future.

Upon request of your Secretary, I have prepared this paper, the subject of which is "Chunk Honey," and I hope that it will interest you.

First, permit me to say that I have had successive years of experience with persistent efforts in the production of section, extracted, and chunk honey; and at present I am operating 16 apiaries in the production of the latter, which I have found far more satisfactory, either on a small scale, or extensively.

The cost of the equipment and appliances necessary in chunk honey production are less. It is less laborious, and the simplest, most economical and satisfactory way honey can be produced. One apiarist can harvest, with the same number of colonies,

pack, case and ship, a crop of chunk honey, the returns of which would be greater than if he had produced either section or extracted honey. If this be true, and it surely is, the financial side of the question is solved.

Time does not permit me to go into the practical side of my subject, but it is simple and will be given in full in the bee papers before another season. It is a combination of both comb and extracted honey, produced in shallow extracting frames and supers, about one-third extracted and two-thirds comb. The honey is closely packed in large-mouth jars and cans, sealed up, the darker grades in the cans and the lighter grades in the jars, and neatly labeled. The honey will retain its flavor better and longer, and does not granulate so soon; and if it does it can be quickly liquefied by setting it in warm water, the sunshine, or a warm place. This direction should be placed on the labels, and if it should carelessly be brought to such a high temperature that the comb would melt, there would only be a small amount of clear wax which would collect on the top of the vessels, and the honey

would be a nice article of extracted. Therefore, chunk honey is freer from all impurities, better kept and more wholesome than any other way comb honey can be put up.

Transportation charges on chunk honey is a matter of great consideration. Freight rates in glass, No. 1; in tin, No. 4, and if shipped by express, B class, or the same as merchandise; and smash-ups on the railroads hardly ever occur.

But what about the market, which by the way is very timid here in this portion of the South? I am glad to say that it has solved the market problem for me, which was, previous to chunk honey production, a great drawback to me. I did a lot of traveling, drumming and advertising; since then I have done no advertising, and but little traveling or drumming (none the last season), and the output of my apiaries does not nearly fill the orders. The prices obtained are about the same as for section honey, and the dealers make about the same profit, but the railroads get less out of it, and the consumers more. These are great advantages in favor of chunk-honey production.

Now about its future: I believe it has a bright one, taking all things into consideration. It has contributed much towards making Texas the greatest honey-producing State we have, and other States are sure to fall in line. If honey ever becomes a common staple, it will have to be produced and put on the market in this way, for the present style and manner in which honey is produced and put on the market will never extend its sale in towns and cities, and out over the country, to any great extent. Country people, and a large number living in towns and cities, will never buy it at all. We have to reach this trade, which can only be done with chunk honey; and if we create a much greater demand for our product, we have got it to do.

There are several organized companies that are canning and placing in nearly every store in our land great quantities of syrup, with but little effort. Chunk honey would supply the demand better. One of these large syrup canneries is located near me, and it is astonishing to know what an enormous business they are doing, and it is netting its stockholders a large

dividend. Why not the bee-keepers share in the harvest?

Then, too, the numerous styles of hives and supers, and the legions of methods of management which are knotty, misty, tedious and burdensome, and are a deadly weight on the progress of our industry, will have reached their climax, and we will enjoy a season of rest and prosperity.

J. J. WILDER.

Cordele, Ga.

President York—A man with sixteen apiaries ought to have a right to speak.

Mr. Burnett—Dr. Miller rather covered the situation. It is a matter of education, as to how you eat your honey. I agree with the Doctor, with the idea that where honey is put up in this way, if the comb was built without foundation, it would be a great advantage and the honey would be much better. Now, it is a matter of fact among all of you with regard to comb foundation, that the foundation used has not given so much trouble in the marketing of the honey. While it is an objection at the present time, if they would produce the honey and take time to educate the people into thinking of that honey—a dish all smeared over the comb with extracted honey, that it was as inviting to the eye as it would be to put on a plate. Now, without any honey being taken out of the cells, there certainly would be a market for the honey and it would be better, but it would have to be cut with a spoon instead of a knife, and people as they do in Southern Illinois—my own experience there—they brought on at the hotel a bowl of honey with a spoon in it, and it was part liquid honey and part comb; cut out what you wanted and help yourself. I tried it and the honey was all right. It was produced without foundation. The combs were not straight, but it didn't make much difference when you cut it out with a spoon, and it was as palatable as any honey of its kind. It was a yellow honey. Now people of this section of the country, this side of what they call the Mason and Dixon's line, are accustomed to having the honey put on the table in a neat fashion, not mushy, and if it is possible to get people, in a reasonable length of time, to regard honey-

as clearly desirable in that mushy state, it would be an advantage.

Mr. Brown—I have one hope that Mr. Scholl and Mr. Wilder and those people who work for comb honey will succeed in getting other bee-keepers to follow their example, and, for one reason, to save our basswood. The enormous quantities of basswood cut down, it seems to me, that bee-keepers use, ought to be changed or stopped in some way.

Mr. Dadant—Don't you think one reason why this chunk honey is in such general favor in the South is that it resembles so closely the natural honey cut from the bee-trees? In the South there are many more bee-trees than here, and the people down there are used to seeing the mused-up honey, as you call it, and when they see this honey, it is a sort of an assurance to them it is a pure article. That is the way they are used to having it. It looks to them like the pure article.

Mrs. Holbrook—One fact I gathered last fall from across the lake—a man has about fifty colonies and produces all of his honey in chunks, and I saw it in the grocery stores, right out on an open plate, and they tell me it sells very rapidly. It was on a tray there in a grocery store.

Mr. Baxter—What is the gentleman's objection to foundation in chunk honey?

Mr. Burnett—The objection would be, it is more difficult to dissolve, and it dissolves with less ease. The wax as prepared by the bees seems to dissolve with much more ease than the foundation which is prepared.

Mr. Baxter—Well, the foundation is used in the comb honey and it is not objectionable there, and I should not think it would be any more objectionable in the chunk honey.

Mr. Burnett—It is objectionable everywhere, if you can get along without it.

Mr. Baxter—Even natural comb is objectionable to me.

Mr. Huffman—Isn't it a fact that honey built on foundation is a little tougher? The process it goes through makes the wax tougher than if it is right direct from the bee. I think Mr. Dadant is correct, and I think you will find that is where the trouble is with the process; all of this wax goes through in the foundation makes it tougher.

President York—You mean Mr. Burnett was right, don't you?

Mr. Huffman—Yes.

Mr. Cavanagh—I don't think that is objectionable to every one. I know it is not to me. I rather like to get that chewy foundation.

President York—Whenever I get a chance to "get back" at Dr. Miller I like to do it. He criticized me for using the word "chunk," said I ought to use "bulk." And that man used "chunk" all through his article, and he has sixteen apiaries! (Laughter.)

Dr. Miller—Where does he live?

President York—In Georgia—in the South.

Dr. Miller—I said the Texas people. A Mr. Hyde, more particularly. He believed—if you remember—he believed in "book" honey!

Aroma of Extracted Honey.

"Is it possible to get the delicate aroma found in comb honey, after it goes through the extractor?"

President York—How about that, or is extracted honey as good as comb honey? In other words, does it have the delicate aroma or flavor that comb honey does?

Dr. Miller—I don't believe that extracted honey, as it averages, begins to compare, in quality, with comb honey. I don't believe there is any sufficient reason that extracted honey ought not to be as good as comb honey, and I believe the men who are producing extracted honey, if they know their business, they will try very hard to make it so we cannot tell any difference in the taste between extracted and comb honey. I think you will all bear me out that there has been some very vile extracted honey on the market. Mr. Burnett will say that, I am very sure. Worse than anything you will find in the line of comb honey, which is because you can abuse extracted honey, as you cannot abuse comb honey, and leave it still comb honey. There is a chance for the air to work on the extracted honey; there is a chance to have unripened honey—extracted when it is unripe; you cannot get it in as unripe a condition as you can in the extracted honey. So you see, it depends upon which way you are looking at the question. If you are looking at what may or what can be, that is one thing; if you are looking at what is, that is another thing.

I believe if the bee-keepers know their own interests, they will strive very hard not to put anything in the line of extracted honey on the market that is not up to a good standard. And I am condemning myself when I say that, because years ago, when I run for extracted honey I put something on the market that no decent white man ought to put on the market. (Laughter.) I didn't know any better than that. If some man had said the things I have said to-night I would not have done it.

Mr. Baxter—What makes the difference? What difference does it make whether it is good, or not as good? The public don't know the difference—the public never looks at the quality. You have to take their eye, that is the only way you can satisfy the public. Take a Ben Davis apple, take a Concord grape; the public don't look at the quality of anything. I know that, because I have been shipping grapes in big car-loads. You show them something beautiful, like these Western apples that are in the market, and that is what they want. They don't care a snap for the quality, if it looks nice.

Mr. Burnett—I do not wish to disagree with the last speaker in this matter, but let us accept his explanation, that it does not make any difference about the quality to the public, if it pleases the eye. Now I grant that is true, that people should buy honey simply because it is honey and looks pretty. But they don't buy honey very often. They don't say, "Here, it looks pretty and seems to be all right, but I don't care about it having any taste that I particularly care about." They don't say it. Now, last year, of course, we had a great honey crop, had lots and lots of comb honey. We didn't get it used up until this autumn, but it is all used up now, so far as I know, and we had very little Western honey. I am speaking now of comb honey, and towards the end of the season, people got to using honey more largely—that is, judging from our sales—than they had for some years before. They said they didn't know how it was, but somehow the honey tasted better to them this year; don't know whether the apples were not so good, or something else was not so good, but they had eaten more honey than they had for some time. Now, there is such a thing as buying

more goods because you like the taste of it; if it tastes good, you like it; if you taste a thing, if it does not look good to you, if you taste it you like it, and you will use much more if it pleases the palate than if it pleases the eye. Therefore, the facts are that the people who extract their honey have got the idea largely as our friend has, that all you need to know about it is to get honey that looks good. But people who sell honey from house to house, they find they say, "We have got some of that honey you got of us last year." And I, from an experience of over thirty years, have noticed this thing carefully, and this year there was such a demand for Western honey came from all over, and it was observed at once. People wanted it. Next year, if we get a crop of honey here, we will have to go through this same fight again, to talk them up to the fact that the honey this year has got some taste to it. That is, next year. This year they will say, "Well, the honey looks good and pretty, but our folks don't use it." The store-keeper gets it and sells out a case and it looks all right, but the people don't buy any more of it. Last year the crop of Illinois, Wisconsin and Michigan, out of that crop they sold, after a time, more and more honey. It has been cleaned up. Years ago we used to get good sage honey from California that, in my opinion, when properly ripened, is not excelled by any honey for people to continuously use. They will use it and ask for it year after year. I have said this year, "Yes, we will have some of that sage honey this year." They say: "I have not had any good honey for several years that tasted right. When you get it, let us know." Now sage honey comes this year and it is not as good as it was, it is not so good. So far as we have gone, we have not had any that has been equal to years past. It may be that the flavor is not in the sage this year; the flavor is not there. It is good honey, it is clear enough but it lacks flavor. And when you put it in your mouth, the taste leaves quickly, it does not remain there. The flavor is not there. It has not got that penetrating aroma that honey-lovers, or people who eat honey for honey's sake, want. Now, in comb honey, the bee-keepers have to leave it in until it is ripe, and honey that comes out of the

comb is good, has that sweetness of aroma to it that pleases the people who use it. They get their extracted honey, yes, out of comb honey, but, on the other hand, if they do that with Western honey, they don't get it. They say, "That honey—why, I guess that is that sugar-honey the bee-men are using now, that ain't got no taste to it!"

Mr. Baxter—One reason there was such a large sale of honey last year was the dearth of fruit, and high price of fruit. There were no apples here last year, and Mr. Burnett knows apples sold here right on this market last year at five dollars a bushel; and, another thing, the use of honey is very much a matter of custom. I had Mr. Dadant the other day ship a consignment of honey to southern Kansas. He said he would not use that honey at all. He is an Illinois man. He wanted Spanish-needle honey, and we didn't have it. He got heartsease. I got a letter from him the other day and he said that was all right; he was pleased with it. Take a man that comes from a buckwheat region, he won't use anything but buckwheat honey. But when you come to those fine distinctions, the difference between a fine aroma of extracted honey compared with comb honey, nobody but a connoisseur would know the difference.

Mr. Burnett—In regard to that apple question, I want this to support what I have said. I deal in apple, and, of course, as Mr. Baxter says, I do know a little about it. The government statistics this year show the crop is about one per cent less of apples than it was last year. So there is the difference in the statistics he has got and those that are given where I found them. The apples last year were good. We have not had as good apples as we had last year in the Western States for years. The crop in those same sections this year are not so good, and the apples are not so good, and they start in at a high price this year—poor apples at a high price. People have quit using them already, and apples are about a dollar a barrel less than they were sixty days ago. We are beginning to realize we are stuck on poor stuff again. The crop of 1908 apples started in at low prices. People found they were good, and they continued to use them, and they did go up to those high

prices. Simply because the stuff was good, and good stuff I have found, gentlemen, will tell. Live as long as Dr. Miller has, and grow as good as he has during these years, and you will find that to be a fact.

Mr. Baxter—Right there I would say, how about the Apple Shippers' Association? What do they say about statistics? They say there is twenty per cent larger crop, according to them, than there was last year. Why, Carlisle alone shipped fifteen thousand; how about Oregon, and how about Idaho? Why, the quality of apples this year is far superior to what they were last year. And how about Vermont? How about York State? When you come to quality, the quality is better this year.

Mr. Burnett—I don't wish to enter into a discussion of the merits of apples this year. The apples are on the market and can be tested for themselves. The Colorado crop of 1908 was cut off by a frost. This year, they have a very abundant crop and they are probably the best apples that are coming to this market this year, or any other market. The crop from the West—the apples are smaller and not as good as they were last year.

President York—We are getting off on the apple question instead of honey.

Dr. Bohrer—I was going to ask what influence this has on the extracted, or the other honey? That, I understand, was the question. I don't see how the use of the extractor could exert any influence on the taste of the honey. I could never detect any difference. There is some in the wax even after it is melted, and there is a taste that goes with it, but I say when it was manufactured and molded into the comb, it stays with it, and that if it forms with the honey, it will go with it to the extractor, and has nothing to do with that matter at all, except to take the wax away from it, or to put it away from the wax. As for the looks of it, I think there is more in the looks of comb honey that makes people want to eat it than anything else. It is a little like Limburger cheese; it looks better than it tastes. I can prove that by Mr. Huffman—

Mr. Burnett — I object to turning this into an experience meeting. (Laughter.)

States Represented.

"How many States are represented at this meeting of bee-keepers?"

President York—We find by the membership list that we have Illinois, Michigan, Nevada, Wisconsin, Indiana and Kansas.

Dr. Miller and European Foul Brood.

"Does Dr. Miller know anything about black foul brood?"

President York—I think he explained himself this afternoon, and we will refer that questioner to that answer when it is published.

Dr. Miller—It is barely possible that in all soberness that question was asked, and it is barely possible, it would be nothing strange, if there might be some here who thought black brood was identical with European foul brood. The black brood in New York State was called black brood for a number of years, and the Europeans objected strenuously to our naming those diseases as we did.

Feeding Sugar Syrup in the Spring.

"If bees are fed sugar syrup in the spring for stimulation, will any of it left in the brood-chamber be carried into the super?"

Dr. Miller—It may and may not. If the combs in the brood-chamber are filled pretty full, then the room is needed for brood when supers are on, you may count pretty safely on some of it being carried up.

Mr. Huffman—Dr. Miller's explanation then would be: Would it be advisable, then, to feed very heavily in the spring of the year, sugar syrup, for fear of it being carried into the super?

Dr. Miller—No, it would not be—I would not say that.

Mr. Baxter—It is not often necessary to stimulate them.

Mr. Huffman—Some times they are pretty near starving; then, what?

Mr. Baxter—You would not have to feed again. The object in feeding in the spring is to keep the bees in a good, healthy condition, for breeding, and you don't fill the hives for that purpose. That is, between the bloom of the fruit and the white clover.

Mr. Brown—I would like to say, as a general rule, I don't think any syrup would get into the super, for the reason about the time the bees enter the section, they crowd down and put more

honey into the brood-chamber, and reduce the amount of brood at the same time, so that unless the bees are very much overfed, there would be no danger. I don't believe anybody would go to the trouble and expense of over-feeding bees, for it would be a useless expense.

Refoundationing Brood-Frames.

"Is it practical to remove the wedges from brood-frame top-bars to put foundation in the frames after the first time?"

Mr. Baxter—It is. Where I had foundation in last year, and the bees gnawed holes in the foundation, and there was danger of their building drone-comb in those places, I took the wedges out and put new ones in.

Bottom Starters in Sections.

"Does it pay to use bottom-starters in sections? If so, in what way?"

Dr. Miller—I think it is important. Possibly I am prejudiced, for I think that is my own idea. I am not sure about it, but I don't know of anybody using bottom-starters before I did; but since coming here I have learned one reason for using bottom-starters I had not heard of before, and that was, it made the section more saleable. The whole section not being built down to the bottom, the customer would say, "That section is not full," but where they use a bottom-starter, it would be full nearly down to the bottom. The reason that I began to use bottom-starters for fastening the section at the bottom was, first, to make it safer for shipping. That alone is sufficient reason for me using the bottom-starters.

Mr. Kannenberg—I have used the bottom-starters, also, but those bottom-starters I had, or, I don't know whether it was my fault or not, but the bees built the bottom down too far, and it got a kink in the section, and it looked worse than if there was no bottom-starter. So I gave it up.

Dr. Miller—How large did you use it?

Mr. Kannenberg—Just about half an inch.

Dr. Miller—How near together were the two starters?

Mr. Kannenberg—Just about an eighth of an inch.

Dr. Miller—I should say you had your bottom-starter rather shallow. Five-eighths of an inch is better; and

yet I don't know why there should be that trouble.

Mr. Kannenberg—The bees built it down so far it got a kink between the bottom starter and the top starter.

Dr. Miller—I have seen that kink often when they were partly down, but by the time they finished it up, the whole thing was built down square.

Mr. Kannenberg—It was not with me.

Mr. Brown—Did I understand somebody to say that the bottom starter curled away?

Mr. Kannenberg—Not the bottom starter; the top starter.

Mr. Brown—I was going to say, in connection with the bottom starter, that in all cases the foundation should be put not in the way the bee would build it naturally, but with the cell-wall—the horizontal wall of the cell—on the upper and lower side. The bees naturally build a cell-wall vertically on the side, and the foundation should be turned half around, in order to make it stiffer. Otherwise, you will have trouble with the bottom starter curling over.

Mr. Wheeler—I think that is a very important question with people who are producing comb honey, the competitors with Colorado honey and California honey. In those countries, it looks as if the bees do not require bottom starters. They build down a section and clear down through it, without any starter, but in this country they don't do it, and the people who produce honey for market in this part of the country have to compete with the Western honey, more or less, and when our honey goes on the market, as it has this year, with the section short at the bottom, they don't look well. If they have a bottom starter, the bees will attach the section to the bottom and make a section look fuller and better, to my mind. I would not attempt to produce a crop of comb honey without bottom starters.

Mr. Trickey—As the gentleman says, as to combs not being built down to the bottom of the section, in Colorado and California, and the Western country, I find, by twenty years' experience in that line of business, that we get the honey off the hives in that country that is not filled out good to the bottom, and we even get some of it off that is not attached to the bottom

by from a half to a quarter of an inch; built down very square and nice, but still fail to attach it to the bottom. The bottom starter seems to remedy that defect to some extent, and, while there may be some defect to it, it remedies that with us. We have some of that kind of honey sold to us here, but a great deal of it is kept at home, and is not brought on the market here. And the cause of that, generally, is a sign, in that country, of a cessation of the honey-flow at a certain stage of the completion of the section, more than the bottom starter, or the side starter, or foundation for the bees to work on. If we get a good honey-flow that lasts until the completion of the section, we very seldom have any trouble about filling out. But, if it slacks off in the season, we have all kinds of trouble, the same as you do here.

On motion, the convention then adjourned until 9:30 a. m. the next day.

Second Day—Forenoon Session.

The convention was called to order at 10 a. m.

The Question-Box Program.

President York—This morning we have with us Mr. Holtermann, from Canada, Mr. Wilcox, from Wisconsin, Mr. Whitney, J. L. Anderson, and Mr. Kimmey, from Illinois, and others who were not here yesterday.

A great many people think this is the best convention held in America, excepting, of course, that held in Ontario, where Mr. Holtermann comes from! The old "Northwestern Society" never had a paper read. Last year we had papers, and Dr. Miller thinks we make a mistake in bringing in papers this time. I tried to prove to him that we were more progressive than in those days when they did not have any papers read. I do not think the papers hurt very much, and if you do, I wish you would notify the Executive Committee. If you do not want any more papers, I think we can agree on that point and not have any. The papers have been short, and have brought up questions that we have discussed.

Dr. Miller—It may be interesting for some to know just how that started, having the meeting taken up entirely with questions. The first meeting had

been called in the American Bee Journal. Mr. Rice was temporarily in the chair, and then a set of officers were elected. I think I didn't come into the meeting until just about the time of that election, and to my surprise I was elected president.

There was no program—no preparation whatever, and I was to preside over that meeting, and what was going to be done, I didn't know. Well, I took Mr. Langstroth's bee-book, and looked over the index and checked the things from the index that I thought might be interesting to talk about, and presented those as they came along; then I said, If any of you have any questions, put in your questions. And that question thing grew until it was all questions.

Now I don't know, I would not pretend to say it is best to shut out all papers, but I do believe that the interest centers largely on these discussions.

I can read a paper after it is published, and I can't hear you men talk, and I would not come here to hear things read. I can read about things in the bee-paper, but I would come quite a long way to hear any of you talk about bees. Like attracts like. Here is Mr. Holtermann. He would not come here if he didn't think there would be some wide-awake men to talk, whom he wants to hear; he can read about these things in the papers, but he comes here to hear you talk.

Mr. President, you can bring in all the papers you like. I have kind of prejudiced the minds of these people; I know they will want the Question-Box. I don't say altogether Question-Box. I felt a little bit uneasy when I saw so many papers; the Question-Box is my baby.

Dr. Bohrer—I only want to add a word in regard to the papers. While some papers we get are excellent, a great many are not worth the paper they are written on. The question-box is the most valuable source of information. Bee-keepers come here from long distances, and they put questions before a body like this that some one is able to answer in some form or other; it is a sort of distributing information among bee-keepers. I regard the question-box as an excellent thing—the best of all; but it won't do to ignore

the papers entirely, because once in a while there is an excellent paper.

Mr. Holtermann—I might say what brought me here was, I read from the notice of the convention the men who were going to be here, and I made up my mind there was some pretty good material going to meet with you, and I wanted to come and see what was to be said. In regard to the question-box drawer, I am standing between Dr. Miller and the president, at present. The question-box drawer has degenerated in some places into one man answering all the questions, and I don't consider it worth very much. Once or twice I have been asked to take the question-box, and I said: "No, I don't pretend to be able to answer every question." The right way to conduct the question-box is as you are doing it. I am in favor of saying that such and such men are coming to the convention. I think it reflects great credit on your secretary to get out notices of that kind, and to have one or two spaces definitely announcing short papers is an advantage, and I think that is what you both think.

Mr. Wilcox—I never like to go to an institution and see all the discussions on one side. Those who advocate the question-box exclusively ignore one important fact. Now, in all our agricultural conventions, conducted under the direction of State officials and others interested, they have in mind the presentation of certain facts; certain things they want to talk about; certain things they want discussed, and to ask for papers on those subjects that you wish to bring before the people. Then you may have as many questions as you please, after the papers are read. In this way you get subjects discussed in which the managers are particularly interested.

President York—Mr. Wilcox "is a man after my own heart," on that subject!

Mr. Kannenberg—It is all right, as Mr. Wilcox expresses himself, but at the same time, when these papers are read and the man who wrote a certain paper is not here himself to give answers to the younger bee-keepers who want to know about the things set up in their papers, we would not be able to answer it because the man is not here himself. If the man is here, he can answer those questions; I think

that is the best way for the younger bee-keepers to learn.

President York—I was glad for one thing: That Mr. Holtermann said he came because he wanted to come. I notice Dr. Miller said he was forced to come. We never want to force a Canadian to come over into the United States, although they want to get us to come over and settle in their country!

Dr. Miller—Before this is closed I want to ask three questions: 1st, How many persons prefer mostly question-box? 2d, How many prefer mostly papers? 3d, How many prefer half and half?

Pres. York—How many prefer mostly questions, raise your hands? (Twenty.) How many prefer mostly papers, raise your hands? (None.) How many prefer an equal quantity of questions and papers, raise your hands? (Five.)

Clarifying Black Beeswax.

"How can black wax be clarified?"

Dr. Miller—Can it?

Dr. Macklin—I asked that question. I had some wax come in that was as black as my hat, and I clarified it, but I don't know whether I did it the right way. I used sulphuric acid. I melted up in a large can about 20 pounds of it; after it was boiled I set it on the back part of the stove and left it for a half an hour, and poured in sulphuric acid, slowly, a few drops at a time, until it got to be what I considered clear and then I let it settle, and took it off. I got 19 pounds.

Dr. Bohrer—What amount of sulphuric acid did you use to the amount of wax in the kettle?

Mr. Macklin—I had 21 pounds of wax in the first place, and used six ounces of commercial sulphuric acid.

Mr. Holtermann—How did that wax get black?

Mr. Macklin—I bought it of some one, and suppose it was rendered in an iron kettle outdoors.

Mr. Wilcox—Once I tried to clarify dark wax, and it turned black instead of white. I used sulphuric acid; we finally concluded that the reason was that there was iron in the water in which it was boiled.

Mr. Baldridge—What sort of a vessel did you have your wax in when you clarified it?

Mr. Wilcox—An old can I found,

made of galvanized iron. It was perfectly whole when I started operations, but when I got through the bottom was eaten full of holes; but I managed to get the wax out of it.

Dr. Miller—Suppose, Mr. Dadant, that I have some of that black wax; in other words, suppose that Mr. Macklin wanted to send some to you. Would you rather he would first clarify it in that way with the acid or send it without clarifying?

L. C. Dadant—Send it without clarifying, and let us do the purifying. The use of acid is always objectionable, for making comb foundation the bees do not like it. It might take a good deal of light wax to bring the color of that up, but we hardly ever run across very black wax, and we can use a very little sulphuric acid in purifying that black wax by our method, and get it clear, while the bee-keeper uses six or seven times as much, especially if he follows the directions given by some manufacturers of comb foundation.

Mr. Anderson—Would you allow him as much for that black wax as you would for the lighter color?

Mr. Dadant—We could not, because the light, clear wax we use for making surplus foundation, and that is worth more than for brood foundation. We would use that wax for brood foundation.

Dr. Miller—I think you don't quite get Mr. Anderson's question: Take that same wax—suppose he had sent it to you, black, without clarifying, you would allow him a certain price. Suppose he clarifies with acid, and sends it to you, will you give him more for it?

Mr. Dadant—I would pretty nearly have to give him more for light wax, but it would be under protest. You can tell wax that has been clarified by acid, unfortunately, by the smell, and we tell them not to do it again.

Mr. Holtermann—There is one point there. The gentleman lost two pounds in weight, so you could afford to get a little less per pound and get as much out of it.

Mr. Macklin—The question has not been really answered yet.

Pres. York—It may be a trade secret, though.

Mr. Kannenberg—Mr. Barkemeier tried it; may be he can tell something about it.

Mr. Barkemeier—I had some black wax, and I put five cents worth of sulphuric acid in it, and it was not yellow enough; then I boiled it again, and put ten cents worth in, and it was yellow.

Mr. Holtermann—Is this thing called clarifying not really a failure?

Mr. Dadant—That is what it is; you can get black wax clear, but it will be black wax; it won't be white. You can have wax that is almost white, but have it cloudy, so when you take the foundation up you can hardly see through it; Dr. Miller knows something about that; but by heating it to a certain temperature and keeping it there, it will be so clear that you can see right through it. It will not be pretty wax. You can hardly make nice wax out of wax that has once been ruined; you can clarify it to some extent.

Dr. Bohrer—What effect would it have, passing it through a solar extractor, towards bleaching it? Has any one ever tried it? As far as I have observed, when I have passed wax through a solar extractor, it has a tendency to get whiter; but, really, I have had no very black wax.

Mr. Dadant—If wax originally was light-colored, and not been broken too much, it can be bleached back. I have heard my father say that bleachers would rather get this grade of wax than the Mississippi red wax; you can't bleach that so it will be white; you can lighten it.

Dr. Bohrer—What effect would it have, passing it through a solar extractor towards bleaching it, was my question? I would like to hear from some one else who has had experience with it.

Mr. Dadant—If the original grain or light color has not been ruined too far, it will lighten it up. You can't get it as nice, though.

Mr. Trickey—As to the Doctor's question, as to how to bleach wax, or whether it would bleach it to put it through a solar extractor. I tried that once and got a lot of it into thin sheets and exposed it to the rays of the sun, where it would not be too hot, and that will bleach it white without any acid or anything else. From my observation, putting it through a solar extractor—the biggest effect it has on it is that it separates the dirt from the

wax without changing the color to any great extent.

Mr. Dadant—Mr. Trickey's wax is from the West, where he has alfalfa; that from alfalfa is light grain; never is anything else. When it is not light grain, it is spoiled in rendering. His wax went back to its natural color; but you take the red wax, from the Mississippi bottoms, and you can't change that to any appreciable extent, and the bleachers won't pay by three or four cents per pound as much for that as light-grained wax. I mean that from the Mississippi Valley, and around there.

Mr. Trickey—As to our wax being light-colored, and having been spoiled by the rendering of it: The dark wax will bleach white as well as the other, under the sun, but it is a very tedious operation.

Dr. Miller—Might I ask Mr. Trickey whether in bleaching the wax it is not hardened at the same time?

Mr. Trickey—Well, I hardly think so, under the sun. I didn't experiment with it very much, because I concluded it was more expense and work than I cared to undertake, so I didn't test it very thoroughly.

Dr. Miller—If you have a foundation exposed—for instance, lying on the table in a room where there is no direct sunlight upon it—it would bleach there in time, but I know it hardens at the same time, and, I suppose, bleaching in the sun it would harden also there.

Mr. Wilcox—If it would not be foreign to the question under discussion I would like to ask what causes wax to be soft? I have bought foundation from an Illinois manufacturer that was so soft I could not use it; it would straighten all out of shape (not Mr. Dadant's).

Mr. Dadant—Of course there are different ways of making foundation. You would have to know how to purify your wax; get your wax the right temperature when you are making foundation, or there will be trouble. We can make a foundation that will pull right apart; and we can make it where it is so tough you can hardly pull it apart.

Mr. Anderson—Can you make foundation that doesn't need wiring? Make it heavy enough?

Mr. Holtermann—Some ten years ago I had some comb foundation, from a

supply dealer, and the bees didn't like it, and it sagged; it was soft. I made up my mind it must be adulterated. I knew it was not Canadian wax. It came from South America. I sent it to the Department of Inland Revenue, at Ottawa, and had it analyzed, and they pronounced it pure. I am thoroughly satisfied that wax had been over-heated, and had lost its texture; a good many others, who had comb foundation made from that wax, said it was no good.

While I have been sitting here, I have been thinking that we are talking about a good many things that we don't know much about. I believe there is a work for the Government to undertake to advantage, in connection with wax. You go to a fair, and one time you will see bright yellow wax gets the prize; another time, white wax; one judge will pronounce it too hard; another too soft, and so on; in fact, if I knew who the judges were to be, and intended making an exhibit, I would take around a few samples, and ask them what kind they liked best. I believe the Governmental Station should take up this question of rendering wax; it should be rendered at a certain temperature and treated in certain ways. We will then get to know more about wax than we do at the present time.

Color of Wax-Scales.

"What color is wax when first secreted, or still in the scales?"

Dr. Bohrer—White.

Mr. Wilcox—All the wax-scales I have ever seen were white.

Mr. Holtermann—Take a cake of beeswax, and take a fine shave off of it, and you say it is white; you have to be very careful about that—I am not saying it is not white; it appears white.

Mr. Trickey—In my neighborhood, the dandelions blossom in great shape, an in the spring of the year, when they come in bloom, the bees gather the honey in sufficient quantities to build new comb, and that comb is invariably yellow at first.

Dr. Miller—That is not the question; the question is: What color is it when first secreted? I don't say what color it is; it might be white, but, in the building, they might make it yellow.

Mr. Holtermann—Like with golden-rod, the whole hive is made yellow.

Mr. Trickey—As quick as those yellow flowers go out of commission, and the bees get to work on flowers that will produce white honey, the comb becomes white as well, every time.

Mr. Wilcox—Is the comb whiter from clover?

Mr. Holtermann—Yes. That brings in again a point, how very careful we must be. I will confess I don't know what color that scale is, and I want to be very careful about coming to a conclusion. Now, this fact that the comb is yellow when the bees work on the dandelion, does not prove that the scale is yellow, because I know when the combs are being built, in buckwheat season, that, with me, is nice, white wax; and that when the bees begin to work on goldenrod, where the yellow pollen is, it is not alone in the comb they build, but even the wood in the hive gets a yellow tinge. So, is it not possible the same is true of the dandelion?

I don't know that it was understood what I said before about taking a cake of beeswax, and take a thin shave off of it, and it appears to us white; when you get a lot of it and melt it together, it might have a yellow appearance, when, in the scale, it would not. I would like to hear Mr. Dadant on that.

Mr. Dadant—I don't believe I can give much light on that.

Mr. Wheeler—I would hate to see this Nevada man voted down. I am absolutely certain that the wax the bees secrete from dandelion has a yellow scale.

Mr. Holtermann—What is the proof?

Mr. Trickey—The wax itself.

Mr. Holtermann—How do you know but what a little pollen in the comb, added to the wax, will change the color? I want to know; where is the proof? This question has interested me for a long time. I am looking for evidence before I accept; I want to sift that evidence. Where is the proof that this pollen—as in the golden-rod—does not come in contact with these scales and work in with the scales, and then after the wax-scale has been secreted and in the building of the comb it becomes yellow? That is what I want to know.

Mr. Wheeler—The scales that drop on the bottom of the hive are yellow.

Dr. Miller—I want to say that I presented that point to Mr. Cowan. In his book he says that all wax is yellow, and I asked him whether the scales were. He said, "Yes, they are yellow. It is a thing you cannot see the color in it." But Mr. Wheeler sees the color in the scale. If you see the color in the scale, there is no disputing that. Here comes another question I might ask Mr. Dadant: Have you ever seen a sample of white wax that you had reason to believe was not bleached?

Mr. Dadant—Well, we receive a number of tons at a time, of California wax, and when you break the cakes, they would be as white as white could be. I would not think bee-keepers, as a rule, would bleach their wax; it is too expensive—too hard to do. Might have been run through a solar extractor once and bleached, but it is reasonable to believe they do not bleach it. We receive big quantities of this wax almost as white.

Dr. Miller—I have had a little correspondence with Mr. Cowan about that. I took some virgin comb that was built, and melted a little of it together, and sent him a sample, and that was white, and no disputing it at all. If you have it white after it is in the comb, certainly there is reason to believe it was white in the scales, and that sample, I know, was white. I have had more than one sample that, when melted up, was white. Mr. Dadant, if he could tell us, that would be satisfactory proof. If you knew that the white wax you receive was not bleached.

Mr. Dadant—It might have been bleached, but I have reason to believe that bee-keepers seldom go to that trouble and expense. You take capping wax, it is light, anyhow; especially California capping wax—from light-colored flowers, alfalfa, or white sage. If run through a solar extractor once, it might be enough to bleach it perfectly white.

Mr. Wilcox—There is always a chance for the best of us to be mistaken. I heartily agree with Mr. Holtermann, that we may be mistaken as to some of these things, but in regard to the color of wax, which is so positively testified to—in my locality, all wax secreted through dandelion blossom is of grayish color, rather dark, indicating that it has been col-

ored from the combs in the hive, or some of it from a foreign substance, after it has been secreted from the pollen. I have seen no wax built yellow in the spring, in the early spring, that was not of that darkish color, unless it was a new swarm, in which case it would be white; but if old combs are in the hive that are colored it is evidence that it is colored from something in the hive; new wax-scales, I believe, are generally white.

Mr. Whitney—It seems to be an interesting question. It would seem to me that the food the bee gets would have something to do in coloring the wax. Now, you know how fanciers who have white fowls do. They won't feed their chickens yellow corn because they say it will color the feathers. Neither will the cattle man, who is desirous of producing a white line of beef, feed yellow turnips, or something of that kind, because it does affect the flesh. Why should not the feed affect the scales of wax? It seems to me that during the time when the bees are finding nothing but dandelions they might produce yellow wax; if it is white clover season, or they are feeding on basswood or something of that kind, I would think the wax would be pretty white.

President York—Can you tell the source of wax; that is, from what kind of honey it came?

Dr. Miller—I was going to make a partial answer to Mr. Wheeler's question. I think we know very well that there is a difference, and if you will take the ground that all wax is the same color, and then try to decide whether white or yellow, you will fight all day; there is a very marked difference in color of wax, and I have no doubt there is a difference in the color of the scales. Wax is of different colors; there is a wax I think that is green; wax that is red; wax that is yellow; wax that is white. Really, in answer to that question is that it is of different colors.

Dr. Bahrer—When first secreted?

Dr. Miller—When first secreted.

Dr. Bohrer—And before put into comb?

Dr. Miller—Yes, because if it were not that way, the working over would not make it into different colors.

Mr. Trickey—As to Mr. Holtermann's suggestion as to the coloring of wax from the different colored pollens, es-

pecially golden-rod, we have that coloring with us very decidedly, not from what would be called golden-rod, but from a species of sage-brush, a spreading top covered with yellow flowers, that comes in about the first of September, and when that appears the bees will carry that dust and pollen from those flowers to the hives, and they will color all white combs nearly, more or less, with that; and that is discernible from the dandelion coloring in new-built combs. I have seen that wax built from dandelions, by a new swarm, there being no other comb in the hive, and it still maintained that yellow color, the same as it did when built with other combs.

Mr. Holtermann—Did you find buckwheat to be yellow, too?

Mr. Trickey—We have none in that country.

Dr. Bohrer—The bees would, some times, in constructing a new comb, use old comb, and work it over. I have had them go into supers where the combs were a little on the brown order, take part of it, cut the cells down and render it into comb; I have had them take foundation that was put into supers and carry that down below, where I put them on a little too early. We don't know just what the bees are "up to" at all times. I have had them carry every particle of wax out of the supers, down below, and weld it into comb; if the foundation happens to be a little brown, the comb will be colored. As far as my observation has extended, it has simply been confined to the matter of finding scales on the bottom-boards: where swarms have been turned into new hives, I have never seen anything but white scales. Mr. Wheeler has seen colored scales of that kind—was it always from swarms that were newly hived?

Mr. Wheeler—I think not. We don't have any swarms at that time of the year.

Dr. Bohrer—All scales I have ever seen were white; it is generally where they were put into new hives and constructed their own comb.

President York—I don't believe we would better spend much more time on the color of wax-scales.

Mr. Trickey—As to color of wax, with us, you take the white honey that has the white wax, and melt that up, and you invariably get that white wax without any coloring.

Mr. Holtermann—There has been a statement made in connection with the color of honey—that the color of honey would give the color of wax; I am positive that is not correct, because buckwheat honey will give as nice white wax as I have ever had; I believe that the food does affect it, because you take a cow for instance; you know what she feeds upon, and it affects the butter; it is the same with the color of the flower the bee feeds upon; I believe it has its effect.

Source of Wax.

"Can you tell the source of wax, from what kind of honey it came?"

Mr. Wheeler—I moved from a white clover district to a fruit country, and I never before experienced that peculiar colored wax you get in the spring, until I came to Cook county; from the dandelion blossom comes the golden comb, just as quick as the bees start on it. I never saw that golden-colored wax until I came into this county; I suppose it is because the bees out farther don't gather enough honey from the dandelions to color the wax.

Acid Smell in Comb Foundation.

"Why does some foundation have the strong acid smell? Why does it cost as much as better foundation that has no acid odor?"

Mr. Dadant—I would not think that would need any answer.

Mr. Macklin—In connection with that, why could not that wax that has an acid odor be melted over again, in pure water, and eliminate the acid by that means?

Mr. Dadant—After you have had acid in once, it is pretty hard to get rid of it. I have never tried a little quantity in water, but I know that after you have had acid in once, it is a hard matter to get rid of it.

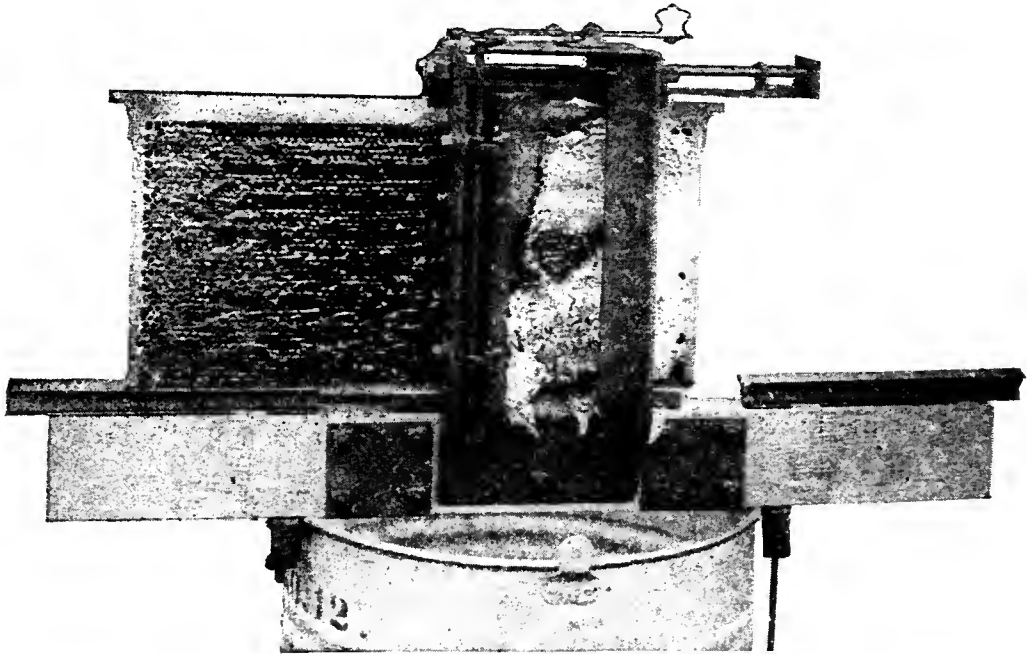
Mr. Wheeler—I had a little experience once that caused me a good deal of thinking. One year I had quite a number of hives, with starters of such foundation, left over. I put new swarms on; I shook my bees out in those hives in each apiary, and in one apiary I could not keep the bees in them; they swarmed out; I lost about fifty. I began to look around for the cause, and I found that the foundation I had been using had a strong

smell of sulphuric acid; I made up my mind it came from the foundation, some way or other.

Mr. Holtermann—How many swarmed out?

Mr. Wheeler—Nearly all; 100 of them out of 113. I lost, I think, 45 that were united with others; they all went together. I went back to that yard, and found bees as high as that table, all in one hive. I clipped all my queens, and in that way kept them

Mr. Holtermann—If he took out three pounds, and used brood-foundation, under ordinary circumstances, he got all out of it but two ounces. I have taken frames, put the foundation in it, and weighed it; knew the amount of wax; then, after the bees drew it out, weighed it again, and found about 2½ ounces of foundation I used, and after the bees drew it out, there were five ounces; that is fifty ounces to a ten-frame hive.



NO. 1—FERGUSON UNCAPPING MACHINE IN ACTUAL OPERATION.

from going away. I would have lost the whole thing if I had not clipped my queens.

Amount of Wax in Combs.

"What amount of wax can be secured from one set of ten brood-combs?"

Mr. Wilcox—I have heard Mr. France answer that question, and he melts up more wax than any one I know of. In many cases, three pounds can be taken from ten brood-combs; I have never taken over two pounds myself.

A Member—Were those combs built on foundation, or were they natural combs?

Mr. Wilcox—I could not answer that. As for my own, they were built on natural combs; what Mr. France's were, I don't know. I think he made that answer at the National convention a year or two ago.

Ferguson Uncapping Machine.

President York—We have with us, Mr. Ferguson, to give us an illustration of his uncapping machine.

Mr. Ferguson demonstrated his uncapping machine at this time, and spoke as follows:

The first requisite of a practical uncapping machine is a knife that will do good work under any condition to be found in everyday work.

This form and arrangement of knives has been used enough to prove beyond question that they will work under any practical working conditions, and I have used them on combs which were just from the hives, on a hot day, and in that soft, plastic condition in which the cell-walls would collapse and bend a good deal easier than they would cut; I have kept filled combs in a refrigerator for several hours, and then uncapped them without

trouble, and in some winter trials the comb was so cold and brittle that the cell-walls would crumble under the knife, having a rough, jagged edge like the edge of a broken egg-shell, and yet the removal of the cappings was carried out perfectly in every case without any clogging of knives, and, under all these conditions, patches of unsealed comb were leveled off without trouble.

The knives are held rigidly in place while doing their work, yet are easily removed for sharpening or cleaning, and they work at such an angle that suction and friction are reduced to their lowest point.

They are so arranged with relation to the advancing comb that their points are introduced first, and as a comb advances, the edges widen the cut, but the loosened position is held in place and carried forward by the uncut portion between the blades until the rear points of the cutting edges are reached, when the detached cappings fall into the tank below, and can not again come in contact with the comb.

After the knives, the most important consideration is the manner of handling the frames.

In all the machines of which I have been able to learn, the frames are dropped or forced downward through the machine, the object seeming to be, to handle them the same as they are handled in the hive, but this method is open to some serious objections.

Either the comb, after being uncapped, must be withdrawn again from the top, taking extra time and labor, or, if taken out at the bottom, the hands of the operator must be put down into the capping tank and directly in the way of the dripping honey and cappings; or else there is provided a special slide or guide to carry the frame out at the end of the machine after being uncapped.

In either of the last two methods, the combs are withdrawn at a point considerably lower than the one at which they are inserted, making rather awkward work in handling, especially if one has to reach down into the capping tank; besides, the comb, being taken out at the bottom, would be likely to become more or less loaded with the cappings dropping from the knives above.

With my machine once established

at the proper working height, all the work is done at this height, there being no necessity for the hands to be brought in contact with the dripping honey from the knives, and the machine will work over any capping tank with a top opening as large as two inches square, and used with one of the new capping-melters, one would have an ideal combination.

In developing my machine, I worked on the theory that as long as one had to handle the frames anyway, the movement should be confined to the frame, and have all parts of the machine stationary; in other words, it is easier and better to move the frame alone than to move both the frame and the machine.

The thrust-bar used for pushing the frame the last two or three inches, is the only part of the machine which moves during the operation of uncapping, and, while that is very light and simple, I am still trying to devise some means of getting rid of it. One suggestion I have received is to remove it entirely, and pull the comb the last two or three inches with the fingers, but I fear this would put rather a severe strain on the finger muscles, if kept up all day, especially with the full-depth frames.

In selecting frames for this demonstration, I took those which would represent the average conditions under which the machine would have to work when in use.

The deep frames have been uncapped once before, this being the second filling; but the shallow ones are filled for the first time, and are, therefore, more uneven in surface than would be the case if they had been evened up once by the machine and then refilled; some of them have low spots, which the knives will probably miss; one in particular lacks considerable of being built out, and shows quite a little unsealed surface; all were filled during a slow, unsteady fall flow, and I had to feed to get the deep ones finished, so they probably represent as poor conditions as the machine would have to contend with in everyday work.

In the act of uncapping, the frame is set into the flaring lower guides, and pushed through between the knives until the end-bar is even with the uprights of the machine, when a dog drops behind the top-bar, and a

slight push on the thrust-bar finishes the operation, and the frame is ready to remove; or, to make the description as short as the operation, set the frame in the guides, push it twice, and remove it.

The machine was designed and built for use with plain frames, but, realizing that there are a great many beekeepers who insist on having a self-spacing frame, I hit on the scheme of using spacing staples in the sides of the top-bars, so that, by removing the knives which come opposite the top-bar, these staples will pass through the opening, and the knives below will uncap the comb just as close down to the frame as when the unspaced frame is used.

The removal of these knives also allows the use of a top-bar wider than the end-bars, thus reducing the tendency of the bees for building bur-combs between the frames at the tops. Any pair of the knives may be removed to suit the height of frame used.

Frames of any height up to and including the regular Langstroth may be used, and there are separate adjustments for different widths of top and bottom bars, and the knife-bars may be adjusted to uncap at any thickness from $\frac{3}{4}$ inch to $1\frac{1}{4}$ inches, according to the requirements of the operator.

To change the adjustment for different heights of frame, it is only necessary to loosen one screw, bring the top guide to the required position, and tighten the screw again.

The guides are strong and sure, and, touching the frame with their edges only, will easily cut through any bur-combs on accumulations of propolis.

I made several of the machines, and put them in the hands of producers for trial this season, and the results of these trials, so far as I have been able to learn, can well be summed up in the words of Mr. Hutchinson, on page 328, of the November "Review," where he says:

"It is simplicity itself, does not clog up, and slices off the cappings as slick and smooth as a mowing machine clips down a field of timothy, and if all combs were built with plain $\frac{3}{8}$ -inch end bars, were as straight and smooth as a board, were slightly bulged on each side so that all the capped surface projected about $\frac{1}{4}$ inch beyond the edges of the end bars, but little more could be asked for in the way of an uncapping machine."

Then he states that but few of his

own combs will fill these requirements and leaves one to infer that he thinks that they can not be filled; and I will admit that where no special effort has been made to provide straight combs, or where the previous uncapping has been hurriedly or carelessly done by hand with some spots cut way below the surface of the frames, or where the frames are unevenly spaced in the supers, these requirements will not be filled; but with a little effort and attention given to getting them once properly built out, and then properly spaced in the hive, this trouble would disappear, as the knives of the machine can not cut below a certain limit, and all combs, after being once uncapped, and leveled up by the machine, would be built out enough at each subsequent filling and sealing to insure a clean job of uncapping.

You know we have been reading a good deal for some years past about spacing the combs wide in supers to secure thick, bulged combs, and then cutting close down to the frame in uncapping, thus securing more wax, more rapid work, and requiring the handling of fewer frames; and that is just the practice I had in mind while developing the machine, and I have been under the impression that among extracted honey producers there was a growing tendency toward the adoption of plain frames and wide spacing.

The success or failure of this machine in its present form, however, will depend almost entirely on whether or not combs can be produced under practical conditions, with their surfaces uniformly bulged enough for the knives to catch.

One other objection raised by Mr. Hutchinson is that, after pushing the frame nearly through the machine, one must "step around to the other end and pull out the comb;" but the thrust-bar at the top of the machine is intended for pushing the comb the last two or three inches when it may be removed without any "pulling," and the only "stepping around" required is a slight forward and backward movement similar to that of a carpenter planing the edge of a board, and I believe I would rather do the work with this slight movement than the same amount of work confined to one position; and the time consumed in this movement is so slight that in this

year's work I uncapped nine frames per minute, taking them from one super and returning them to another, and did not work unreasonably fast, either.

The objection which is oftenest raised is that Hoffman frames can not be used.

Of course it would be desirable to have a machine which would work with any and all frames, if that were possible without too many drawbacks in other ways, but as a general thing the more complicated a machine is made the more impractical and troublesome it becomes; and I have tried to avoid all unnecessary complications, and produce a simple, practical, machine for the use of the extracted-honey producer, and I believe there is enough range of adjustment and variation to make it a practical success.

As an illustration of the varied requirements, if a machine were made to fill the wants of all producers, one man wants the simplest and lightest machine possible to produce, and has trouble with his combs not being bulged enough; while another strongly favors the addition of a quick adjustment device for quickly throwing the knives out to a greater width when an extra thick comb is to be uncapped.

While it would not be practicable to use the regular Hoffman frame, yet with a chisel the end-bar projections may be cut off, thus saving the combs already built, and producing a frame almost as good as the regular plain frame; and by using the staples in the top-bars the self-spacing feature is retained, besides eliminating the old trouble of propolization at the points of contact between end-bars.

The tendency of the times is toward specialization, and the uncapping machine used in connection with the uniform equipment which the specialist must have, would come in play, not only as a time and labor saver, but would help solve the problem of securing competent help.

One decided advantage which the machine has over the hand-knife is the fact that in order to do good and rapid work with the hand-knife it is necessary that the operator be a man rather above the average in capacity and intelligence, besides having a good deal of previous practice in order to work

up the requisite speed and skill; while with the machine any common laborer can learn in a few minutes to push the frames through, and do just as good work, and nearly as much of it, as the man having previous practice; or, to put it in another way, the dollar-and-a-half man picked up on the street will take the machine and do more work than the high-priced, skilled hand-uncapper who is sometimes very hard to get.

For the bee-keeper with only a few colonies, or with a mixed assortment of frames, a machine of this kind would be of little value, unless the old frames were remodeled or replaced with new; but in many cases the saving in time and labor would in a few years overbalance this expense and trouble, especially as there would be nothing about this special preparation that would in any way hinder or complicate the other work, the tendency being in the line of simplification; a fair illustration of this being the case of the farmer, who, a few years ago, had one crop on the hill-top, another on the hillside, and probably pastured the rich creek bottom land, with no regularity as to size or shape or fields, or position of fences; but as he adopted time and labor saving machinery, found himself forced to straighten fences and creeks, drain the bottom lands and clear up the odd corners, and then found that he could do all his work to so much better advantage that the extra expense and work was an extremely good investment.

While the machine, in its present form, does excellent work, it is, in a measure, still in the experimental stage, and it may be advisable to make some provision for handling the Hoffman frame, or cutting below the surface of the frame, although I am very much in favor of the present, light, strong, simple construction, and I do think it will be hard to improve upon either the stationary triangular knives, or the method of pushing the frames in a horizontal direction between the stationary sets of knives.

To sum up, the machine as it stands, I believe, possesses the following desirable features:

Simplicity of construction and operation.

Light weight and compact design,

making it easy to carry for out-apiary work.

The practical absence of troublesome moving parts.

A set of knives that will uncap only honey that can be extracted.

The entire separation of the detached cappings.

An easy and rapid method of feeding the combs through the machine.

Simple and effective guides and adjustments.

L. R. FERGUSON.

Mr. Holtermann—With reference to the spacing, I believe we are going to work more and more on this principle of moderately wide spacing; I don't believe it pays to put nine frames into a twelve-frame super. The wider you space, the more sure you will be to uncap; I don't believe it is a good plan to allow those combs to remain wide; when I uncap, I shave it down to normal, because if you don't do that, you have very deep cells, and bees don't care to begin on that as well as a shallow one; as they put honey in it, they build out; I shave that down to about normal, and then the bees will use that cell, if anything, a little more readily than if deeper; they will add to it. The secretion of wax is in part voluntary; you will give the bees an opportunity to add to that. I use the staple in the top-bar. The difference is, I use the staple only on one side. If this is the top-bar (illustrating), I use the staple on this side, and on this (the other end), but not on both sides.

Mr. Anderson—I use them on both sides; if you have it only on one side, you have twice as long a staple; that is, on this machine.

Mr. Holtermann—That machine would suit me.

Mr. Baxter—My bees are not that kind of bees; don't work that way; they put their honey in the bee-cells; I always get lots of wax. Mr. Dadant knows, for I sold him over five hundred pounds of beeswax; my bees produce wax, and honey, too.

Mr. Holtermann—What is your spacing?

Mr. Baxter—I have nine frames in eleven-frame brood-chambers.

Mr. Holtermann—I used eleven to twelve.

Mr. Cavanage—I would like to know if any of the bee-keepers here ever observed the bee putting honey in one of those deep cells—about like you

would have them, in a ten-frame super with eight combs? I would like to know if you have seen the bee deposit honey in one of those deep cells?

Dr. Miller—I never have; I never noticed it; I never thought of that point. The honey is put in there, but in what position would the bee have to get into to put honey in the bottom of one of those deep cells? It would be almost impossible for a bee to reach into a very deep cell. With other spacing, with eight combs in ten-frame super, we would not have as deep cells as that; the point is very well taken; there is a question there; I would like to hear from some one who has had experience.

Mr. Wheeler—I have no answer to that question. I know the bees put honey in those deep cells; I have seen honey placed in those cells, and have used those thick frames myself for years, but I don't use them any more. I changed to a narrower frame, similar to the one on that machine. I changed my old wide-frame comb-honey supers to extracting supers; I find they give me the best satisfaction; I can tier them up as high as I want to. I would not have a deep frame for extracting super, under any consideration. I would not have a wider one than eight or nine frame. I don't think they cap them over; I don't think the bees like them; that is my impression, from what I saw last summer. The bee would prefer to start on foundation, and build the wax right from the start. They have acted that way with me this year.

Mr. Holtermann—Did you have a very slow flow?

Mr. Wheeler—Well, yes, a moderate flow; sweet clover flow.

Mr. Holtermann—Then that makes a difference.

Mr. Macklin—I would like to have Mr. Ferguson tell us what a machine like that would cost.

Mr. Ferguson—If I were to figure my time, \$50.00 or \$75.00 apiece for what I built so far. And I put in a good deal of extra time on them, but, so far as the cost would be, were they to be manufactured and put on the market, that would be a matter of guess work.

Mr. Huffman—Don't you know about what?

Mr. Ferguson—I would guess, \$20.00; that, of course, depends upon how many could be sold; if made and sold

by the thousand, they could be put on the market for, possibly, \$10.00 each, but they are something that I realize will not be sold very extensively among bee-keepers. How many bee-keepers are there who would operate extensively enough to buy one of these machines?

Mr. Holtermann—At what figure? Fifteen dollars? A great many.

A Member—I would like to ask if that machine can work on a closed-end frame?

Mr. Ferguson—I don't know. My machine will uncap any width, providing you can get the comb built beyond the end-bars.

Mr. Cavanagh—I think there may be some in the convention that have a wrong impression of that machine; that is not the fault of the machine, that the knives catch on the end-bar; the comb is built, possibly, a quarter of an inch beyond that end-bar; with us there would be no objection to using that style machine; the comb that he has in the machine, the surface is even with the end-bar.

Mr. Ferguson—I never did any work with it since I re-adjusted it to bring up here. My object was, that the knives would be kept as close as possible toward the end-bar; these combs are cold, and will draw the knives in; that is merely an item of construction—nothing against the theory of the machine.

A Member—How does that work when the comb is half full of pollen?

Mr. Ferguson—I don't know; I have not tried it on anything but clean extracting frames.

Joining the National in a Body.

Mr. Thompson—I move that we join the National in a body, as before.

The motion was seconded.

L. C. Dadant—We have, just now, 47 paid members, and will not have nearly enough, after we pay our hall rent, and the \$12.45 that we owe to our former Secretary. We will not have enough to pay Mr. France 50 cents per member. What are we going to do? How can we join the National if we haven't got enough? We need \$23.50 with the present membership in order to join the National in a body; and that is the only way to get in for 50 cents. What is best to do?

Mr. Kannenberg—The only thing to be done is to raise the dues; I think

\$1.50 dues would, perhaps, pay the amount.

Mr. Baxter—It is impossible. You cannot raise the dues; you can begin to raise for next year. If the members so far want, voluntarily, to pay an extra 50 cents, all right; it is not right for a few of them to pay and take, for the others, out of the treasury. I think the wisest plan is not to join this year, but to wait until next year.

President York—The way to change the Constitution is to order the Secretary to give notice to the members thirty days before the next meeting as to what you want to do. If you wish to make a motion to raise the dues to \$1.50, you had better make that motion now; then you can talk about raising the fifty cents afterward.

Mr. Anderson—I make that motion.

Mr. Baxter—I believe our first dues are to this society, and we ought to keep it alive; therefore, I am against joining the National this year. I move that we authorize the Secretary to give thirty days notice next year so that the matter of changing the dues from \$1.00 to \$1.50 will be brought up.

Dr. Miller—How will that notification be made? Would it not be well to make the notification now?

President York—The Constitution requires thirty days notice must be given in order to be legal.

Dr. Miller—If you notify them now, would that not be more than thirty days?

Mr. Kannenberg—That means those that want to join the National that they have to pay their dollar to the National; if a person here voluntarily wants to join the National for fifty cents can we do that?

President York—Not until after we join in a body. We must first take action on joining in a body.

Mr. Baxter—I don't believe that; they won't accept it.

President York—Yes, they are doing it right along; we join in a body; then as new members come in during the year the Secretary sends fifty cents and keeps fifty cents.

President York—We are voting on changing the Constitution next year, so that the dues will be \$1.50 instead of \$1.00.

Mr. Huffman—Is that the understanding that we will join the National in a body?

President York—Not yet.

Mr. Kannenberg—It is necessary that we hold over a year for that changing of by-laws?

President York—Yes, that is according to the Constitution. Thirty days notice must be given before the next meeting.

Mr. Whitney—I think if every member of this Association had done as well as I did we would have had money enough to join in a body at fifty cents a piece; I got a new member to join this Association. I agreed to do it last year, or pay his dollar myself. Now I wonder how many of us did the same thing. If so, we would have twice as many members as we have here now.

Mr. Huffman—I would like to suggest this, that you let this run one year, I think the motion is all right; if you see fit to adopt it then, you can. I think in the meantime, if this goes on, you will find you will have additional money, because people are getting interested in the Chicago Northwestern.

President York—Are you ready for the motion? My idea would be that we make it \$1.50 next year; fifty cents for the National, twenty-five cents for the State, and we will have 75 cents per member for ourselves. I think 75 cents will run this Association. The question is whether you will authorize the Secretary to notify the members thirty days before the next meeting of an increase in dues from \$1.00 to \$1.50; you can make it at that time \$5.00, or twenty-five cents. But this is the motion now.

The motion was put and carried.

President York—Now, shall we join send out the notice to members thirty days before the next meeting.

President York—Now, shall we join the National in a body this year?

Mr. Whitney—Mr. President, when it comes to joining the National, how can we when we don't have money enough to do it? If there are volunteers enough to pay fifty cents a piece we can join the National; I am willing for myself. The question is, would it not be better to pay the Secretary the fifty cents on top of the dollar and let him send that to the National?

Mr. Baxter—Don't the records show that out of a membership of eighty-five there was twenty-six that didn't pay the extra quarter last year?

President York—That was for the Illinois State—not the National.

Mr. Baxter—That is right.

Mr. Lathrop—There are some here that are from other states, like myself; we belong to the National already; I don't see any reason in joining through this Association. I am willing to pay \$1.00 here, to be a member of this Association; I am already a member of the National, and always have been ever since I don't know when, and I think there are quite a few others in the same fix, and they have no occasion to join, here, in a body. We joined in connection with our own State Association. This organization is not a local organization. It is an organization of the Bee-Keepers of the Northwest. It doesn't seem to be a practical lay out, except for just Illinois people.

President York—Let me say, if you are already a member of the National, you would not be affected by this. You would not need to pay again. We can't vote a man in twice; only those whose dues are not paid to the National.

Dr. Behrer—The Kansas State Bee-Keepers' Association joins the National in a body. It is hardly necessary that I should belong to this Association and then join it again. I would not want to vote on this question, for that reason.

Mr. Wilcox—I am in exactly the same situation as Dr. Bohrer and Mr. Lathrop. I join, every year, the Wisconsin State Association. I am about two years ahead in the National now. I have always paid up here; I don't know when I will get even.

Dr. Miller—Perhaps it would help a little if we get a little more information on one point—if you ask those to rise who are willing to pay the extra half dollar, we would know a little better just where we stand.

President York—Those who are already paid in advance in the National don't need to vote on this, and don't need to pay another 50 cents.

Mr. Baxter—Last year I raised that point, and told the Secretary to withhold my half dollar, and not send it to the National, and he said it could not be done, and I got a receipt from Mr. France as a member of the National through this organization, as well as through the State society.

Mr. Thompson—I would like to ask

here, before this vote is put, if there are not some here that are not members of this Association?

Mr. Kannenberg—How many members have we in this Association?

Secretary—Forty-seven.

Mr. Kannenberg—Those members that are not paid up, if they are willing to pay that half dollar, then this Association can vote them in the National, and not in any other way, unless a single member wants to pay this dollar in the National.

President York—If any have paid into the National, our vote doesn't affect them at all; they don't have to pay in here to belong to the National.

Mr. Holtermann—I didn't join here this morning; I always have; I go to New York, to Michigan, and to one place and another; it costs me a good deal of money. I am paid up to 1915 in the National; I didn't pay here, but when I find out you are so hard up, I would consider it a favor to be allowed to help you to the extent of a member, so here goes; but I think it is quite right that those that are not members should not vote on this question. I feel sorry for you. We have got things so well managed in Canada that we have a \$500.00 Government grant; it seems your treasury is not in such a good condition. I would advise you all to come to Canada!

Mr. Baxter—Please ask all those who are members of the National, that are here, to rise, and then those who are members of this society, to rise.

President York—All who have paid for one year in advance in the National, please rise.

Mr. Baxter—I want to know how many members that are paid up in this Association a year ahead, are also paid up one year ahead in the National. I want to know how many members that paid their dollar here are also paid up in the National a year.

President York—How many members here have paid their dollar, which will entitle them to a membership in this society, and also have paid in some other society that has made them members of the National?

Mr. Kannenberg—I move that all those rise who are members of this Association.

The motion was seconded, and carried. A vote was taken.

President York—Eleven are members of the National.

Mr. Kannenberg—I move that we join the National in a body, providing we get enough 50 cents to send.

President York—The rule is, that we have to send in 50 cents for each of the members we have. What is right, is what the Constitution and By-Laws say.

Mr. Baxter—You have got to pay 50 cents for those that don't advance it, also.

Mr. Kimmey—I would like to pay my dollar. Let me be a little personal. Last year I think I paid \$1.00 here, \$1.00 to the State, and \$1.00 to the National. I found, during the year, when the reports were sent out, I got three of everything—three receipts, three reports—and I suppose it was because my name was duplicated. It never occurred to me that when I came here and paid my \$1.00 for this Association, for which I get value received, that, in addition, I was to be a member of the National. It seemed to me I had got my dollar's worth here in this meeting. Then, if through the liberality of the National, I was allowed to join with a lot of other men, it did not occur to me that I got anything extra; that I got any credit in advance. I may have some dues paid up ahead, but I never so regarded it. I got my dollar's worth here in this meeting, and paid for it, and I helped somebody else; helped the National; helped somebody else in getting in for 50 cents. It seems to me we had better vote to join the National in a body, and trust something to luck. The Secretary says we have not got money; if, when he gets hard up, and cannot find a way out, he will write me, I will send him a check for the balance. (Cheering.) Now, don't cheer too hard. I have no doubt that you will "make good" here.

Dr. Miller—I move we join in a body.

Mr. Kimmey—I was going to say this: Don't cheer too hard, and think I have done a great thing in offering to send a check, because I don't believe I will have to; if I judge the Secretary right, he is going to get this money somewhere; but I second Dr. Miller's motion that we join the National in a body.

The motion was seconded.

President York—You have all heard the motion, that we join the National

in a body, according to Mr. Baxter, Mr. Huffman, and others; that is, we pay fifty cents for every member who paid \$1.00 here.

Mr. Huffman—We, who are members of this Association and belong to other States, and are paid up in the National, have a right to vote.

The motion was put and carried.

Mr. Huffman—I would suggest that all those who are members here in this Association be so free as to give the Secretary an extra fifty cents; that would make the check so much smaller for indebtedness to send to Mr. Kimmey.

President York then gave the Secretary another dollar, a number of others gave \$1.00 each, and some 50 cents each, so that in a few minutes plenty of money was in the treasury to join both the Illinois State and the National Associations in a body.

Mr. Baxter—If I ever get foul brood in my apiary it will have been worth many times more than it cost me to come to this convention, to have been here and heard the discussions.

President York—A committee of five, on Resolutions, was appointed. We will listen to their report now.

Report of Committee on Resolutions.

Whereas, The disease known as foul brood does exist and is rapidly spreading in Illinois; and,

Whereas, This disease is highly contagious and infectious, and which, left unchecked, has already wiped out many apiaries; and,

Whereas, Many of the bee-keepers of Illinois have many thousands of dollars invested in this industry, and are suffering annually the loss of tons of honey, due directly to the inroads of this disease, being unable to eradicate it under the present conditions; and,

Whereas, The foul brood laws of Michigan, Wisconsin, Indiana, and New York, giving the inspector authority to perform his duties in a thorough and impartial manner, have been successful in curing and suppressing this destructive disease in those States; therefore, be it

Resolved, That the Chicago-Northwestern Bee-Keepers' Association, in convention assembled at Chicago, this 2d day of December, 1909, does petition the honorable members of the Illinois Legislature to pass an efficient foul brood law similar to that of surrounding States, providing for a foul brood

inspector with the necessary powers, and an adequate appropriation to carry out the objects of the law in a thorough and efficient manner; be it further

Resolved, That we pledge our hearty co-operation with the committee of the Illinois State Bee-Keepers' Association in the securing of this law; and, be it further

Resolved, That the Secretary be instructed to place a copy of these resolutions in the hands of every member of the Illinois Senate and of the House, and also one in the hand of the Governor of the State of Illinois.

F. B. CAVANAGH,
JACOB HUFFMAN,
EMIL J. BAXTER,

Committee.

The convention then adjourned until 1:30 p. m.

Dr. Bohrer—I desire to move the adoption of that resolution as read, without amendment; I think it covers the ground precisely, and that is just what you want to do, in order to secure this legislation. Place a copy in the hands of the Governor, of every member of the House and Senate, and every bee-keeper.

The motion was seconded, and unanimously carried.

The following resolution was presented on the death of Mr. R. B. Holbrook:

Whereas, Our beloved brother and member, Mr. R. B. Holbrook, has been called to his reward; be it

Resolved, That, in behalf of this convention assembled, we extend to Mrs. Holbrook our sympathy in this, her great affliction.

EMIL J. BAXTER,
JACOB HUFFMAN,
F. B. CAVANAGH,

Committee.

The following resolution was also presented on the death of Mr. J. Q. Smith:

Whereas, The All-Wise Providence has taken from our midst our beloved brother, J. Q. Smith; be it

Resolved, That we, as a convention, extend to Mrs. Smith our heartfelt sympathy in her bereavement.

EMIL J. BAXTER,
F. B. CAVANAGH,
JACOB HUFFMAN,

Committee.

Rising votes were taken on the two above resolutions, and each was carried unanimously.

SECOND DAY—Afternoon Session.

The convention was called to order at 1:30 p. m.

President York—Dr. Miller, who is on his way home, left with me a slip, giving the Alexander treatment for American foul brood, in condensed form, which he wrote out this noon; also for the European:

Alexander Treatment for American Foul Brood.

Make the colony **very** strong.

Take away the queen.

Ten days later, destroy the queen-cells and give a virgin queen.

For European Foul Brood Treatment.

Brush all frames of brood but **one**.

Put beside that one, two **empty** frames.

When eggs are found in one of the empty frames, take away the foul brood comb.

Mr. Horstmann—Dr. Miller speaks about making colonies very strong; now, the question is, how is he going to make them strong? Is he going to unite several colonies? Or how is that to be done?

Dr. Bohrer—I did it in this way: Go to a strong colony that can spare some brood, and take brood just emerging from comb, and give it to them; that will reinforce them, and they can build up rapidly. After you have put them on, say, strips of comb foundation from two to four days, then put them on full sheets, and give them brood just as fast as they can take care of it; in that way you will build them up strong. When you find you have American foul brood, you will notice that the colony is very apt to be reduced in numbers, and become dispirited. That is one of the first symptoms. I discovered the bees lounging around the entrance of a large Jumbo hive, and I knew that something was wrong; I opened the hive, and found they were infected with foul brood; that was a powerful colony. I put them on strips of foundation, and then on full sheets, and they went on and built up, and I saved them, and they are a fine colony today.

Mr. Cavanagh—I think there is a little danger of being misunderstood if Dr. Bohrer will pardon me. The object in getting those colonies strong,

with European foul brood, is so they may cheer up and clean that disease out, so that when they are shaken there will not be a back-set. The treatment that Dr. Miller has is for European type, and there is great danger of our confounding the two diseases. There is no object in strengthening the American foul brood colonies, to have them clean it out—they will not do it; but they will clean out European foul brood.

Dr. Bohrer—Let that be emphasized—they will not clean out American foul brood; don't risk the kind of treatment just mentioned for American foul brood; European foul brood will do with that kind of treatment, in all probability; I have no reason to doubt it.

Mr. Cavanagh—The Alexander treatment is useless in American foul brood. I wish they would cut out the name of one of those diseases—make them distinct and separate, as they really are. In regard to strengthening colonies:

In our treatment this summer we used these hive-bodies from diseased colonies in strengthening other weak ones. We kept the diseased combs together, and the healthy combs together; and when we cured them up we cured them together instead of spreading in fresh combs that are not diseased; we make the sickness cure itself.

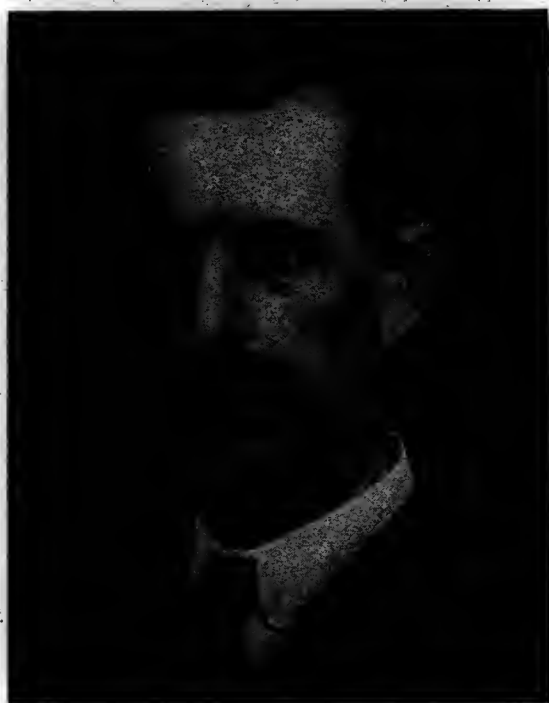
Mr. Baldrige—The simplest and best way that I know of for strengthening weak colonies, no matter whether diseased or not, is to put them in the place of strong, healthy colonies—exchange places; in strengthening my bees I have always done that way, of late years. Select a strong, healthy colony and change places with the diseased colony; you will not carry the disease into the healthy colony, but you will strengthen the other; I don't believe in taking combs from healthy colonies and giving them to diseased colonies, because you will ruin the combs if you do. You have to melt those up.

President York—We discussed this question so thoroughly yesterday I think we would better pass on to the numerous questions that we still have for discussion.

Apiarian Exhibits at Fairs.

"How best to make bee and honey exhibits at fairs?"

President York—We have a paper on



R. A. MORGAN.

that subject by Mr. Morgan, of South Dakota, which I will ask the Secretary to read:

Secretary Dadant then read the paper of R. A. Morgan, of Vermilion, S. Dak., on

Making Bee and Honey Exhibits at Fairs.

To such Fair associations as have no buildings for apiary purposes and contemplate building one, I would suggest the following:

A very complete building may be built quite cheaply, and as small as 24 x 32 feet at a short distance from the other buildings, constructed with a walk through the center, and provided with shelves fitted with glass doors for the reception of the honey, both comb and extracted in its different packages. Then at the rear of the building have a series of compartments screened in with wire cloth, all of which may be viewed either from within or without, and provided with bee-escapes at the top to be opened or closed at option; also arranged with openings so that colonies of bees might be given a flight at any time. This rear part of the building is to be enclosed with a wire fence to guard against spectators getting so close to the flying bees as to get stung.

First, after we have a building, is to see that you have a large assortment of live bees both in one-frame hives and in full colonies, as live animals are much more attractive than other exhibits. These live bees should be in a separate part of the building, so as not to detract from the other parts of the exhibit.

Again, have the comb honey entirely separate from the extracted, as it also is much more attractive than is the extracted. The same precaution must be taken with each department, and in this way you can have five different departments, all of which may be very good.

It is well to remember that the quantity of each exhibit adds very much to the interest taken in the general exhibit. So, in summing up, I would suggest to make each display separate and as large as possible, and in order of importance as follows:

- 1st—Live bees.
- 2d—Comb honey.
- 3d—Extracted honey.
- 4th—Bees wax.
- 5th—An industrial department.

Have a little corner where you show hives, extractors, smokers, veils, tools, etc., then remember that the young people, boys and girls, are to make our future bee-men and best customers.

Have a good, genial young man or woman to take charge of this part of the display, who can actually put a section together, and put in the foundation or wire a frame in a neat and rapid manner, and, at the same time, answer many of the questions that will be asked, in a concise and pleasing way.

Contrary to the opinions of some, I would use my best endeavors to get all goods put up in the most approved packages, but would insist that all goods should be shown in the package used by its producer, as the package is as much a part of the display as are the goods themselves. In this way a prospective purchaser could determine at once which bee-keeper he would prefer to deal with by his exhibit at the Fair; and, again, the producer could see his own products, and compare them with his neighbors', and thereby gain useful information.

R. A. MORGAN.

President York—Is there any one who wishes to add anything to what Mr. Morgan has said, or comment upon it? Who have made exhibits at Fairs? Mr. Holtermann and Mr. Wilcox.

Mr. Wilcox—I have not made exhibits of any importance; I have been Judge of exhibits for several years; I have seen a great many very fine ones.

Mr. Holtermann—I might say that I think it is a very important point, that of making a display at Fairs. I have not shown any for ten years, but back of that, for fifteen years, I followed it right up. I feel that I am indebted to any one who makes a good display of bees and honey at a fair. This is a means of bringing attention to honey, and is a good medium of increasing the demand for honey.

There are certain things in connection with prize lists which I have had in mind for quite a while, and that is, that in putting down that upon which the prize is awarded, there should be as little latitude as possible allowed to the judge to decide. For instance: I was judge of a Flower and Honey Show in Toronto recently; the question came up with regard to a display suitable for a grocer's window, and award given upon it. One of the men claimed that a grocer's space was very valuable in a window. As a rule, I don't think a grocer's space in a window is very valuable;

he said the exhibit should be confined to a very small area. That led me to the conclusion that it would be well to limit the space upon which the exhibit should stand.

Then there was another point: I considered that, in awarding that prize, the kind of package should be considered. What is meant when it says, "Suitable Grocer's Window." I thought the packages should be as large as possible. There was one man who had a pretty exhibit, made of very small stuff, fancy, and I didn't feel like awarding him the prize on that ground. The same way as was mentioned this morning, about beeswax—there is a diversity of opinion about beeswax.

If we are going to give the exhibitor the best chance, we should, as much as possible, make the prize list read so it cannot be misinterpreted, either by the exhibitor or the judge.

This matter of showing bees at Fairs, I think, should be given as much attention as possible. People who come to Fairs, see these demonstrations, and talk about them; tell their neighbors about what they saw, and the result is to make the people have the honey brought to their attention, and create a demand for it. We could easily sell one hundred pounds of honey, where we are selling one today, and one of the means of doing that is, by making proper displays at Fairs, both State and County.

Mr. Anderson—What is a display of honey? I will explain: At a certain County Fair, one gentleman had four jars of extracted white clover honey, all alike; another, three—one of buckwheat, one of white clover, and one between the two. Which had the best display; the one that had four of one color, or the one that had three of different colors?

Mr. Holtermann—We would not call that a display in our Canadian country. I think the proper way is to specify in a display something as to the quantity which should be shown; that is the way I should say. Some people say if you have it in fancy colored bottles, that is a display of honey; that is not a display of honey; that is a display of glass. Now, of course, I don't know just how legally to settle that point; I would give it to the one that had variety, instead of one kind.

Mr. Wilcox—I had a friend who was a prominent exhibitor of flowers, and I asked her to walk around to the honey exhibit and tell me which was the finest display. She happened to come to the same conclusion that I did. She looked at it with reference to the beauty of the display; that the word "display" was intended to convey the idea of good appearance; that is my judgment of it. Some contend that the quality of the honey is what is to be considered.

Mr. Holtermann—It would seem to me it would be well to give the prize not solely on display—count something on quality and something on display.

Mr. Wilcox—Quality does not cut any figure with me on display, because I don't sample the honey.

Mr. Holtermann—It would if it read, 200 pounds of extracted honey.

Mr. Wilcox—We give the premium for the best, then; then quality is considered, but not the word display. When it is display, it is attractiveness that counts, arrangement of packages, etc., taken into consideration.

Dr. Bohrer—I have been at a number of Fairs, and it has been my lot, also, to judge exhibits at Fairs a number of times, and I have found this to be the case, that the exhibits are not as largely educational at Fairs as they should be. I hold that all exhibits, no difference of what kind, or department of industry it may originate from, it should be for the general benefit and instruction of the people, not simply to take a premium. That is not the only thing; it should be instructive to the people.

I have seen, at Lyons, Kans., the bee-keepers' department of our State always have quite an extensive exhibit of bees, honey, hives, and bee-supplies of different kinds. Some are instructive, and others are not. For instance: One man had there twenty different observatory hives; it takes up space, and for no good purpose, that I can see on earth; simply the largest display of observatory hives, and on that they pay a premium.

Another man has three different kinds of bees he wants to exhibit, and I even condemn that; I don't want but one kind on my premises. The exhibits are oftentimes too massive—too many queens—too many bees—too many observatory hives—one fellow

tries to get a little ahead of the other one.

Another thing that I condemn, and I told them at the Topeka State Fair that they were simply wasting money in hiring men to go there for no good purpose. A man came there and stood in a cage and talked for three long hours, and if he said one word that was instructive to the people, I don't know what it was. He didn't say one word to the people who attended that Fair that they could understand. The impression that he sought to make was, that he had some wonderful magnetic influence over the bees that no one else possessed, it seemed. I don't want to see anything of that kind at a Fair; it is of no value whatever. He should have gone on to explain the reason why—he could have done it in two minutes.

Mr. Holtermann—The fault was not with the prize list there, or with the demonstration, but with the man.

President York—That was in Kansas, was it not? Maybe "locality" had something to do with it! (Laughter.)

Dr. Bohrer—It was in Kansas, but not a Kansas man who did it. I won't say whether he was from Illinois or not! (Laughter.) These exhibits can be made instructive to the people. It is one way of letting the world know what we are producing in the different States, to show them at the different Fairs, County and State. When we have a County Fair out there, men bring hogs, cattle, horses, and things that I didn't know were in existence in the county at all. It is so with the bee-business all over the country. People are surprised when they come there and see so much honey, and so many bees.

In Kansas, about thirty-six years ago, when I located in Central Kansas, a colony of bees could not exist there without being fed. I was satisfied it was not adapted to bee-keeping at that time. Today it is getting better every day, and we have the grandest display you ever saw of alfalfa honey, short of California or Colorado. They are older than we are, and have got more of it.

But what I would aim at is, to make your exhibits profitable and instructive to the people; do away with all fraud in the exhibiting of bees; let the people know just how things are done.

Joining the Illinois Association.

Mr. Baxter—Does this Association want to affiliate with the Illinois State Association? There is one advantage, I think, in doing so; it is this: The reports of this, the National, and the Illinois State Associations, are published in a nice little book, bound in cloth, and you can refer to it whenever you want to. I am bringing this up now, as I am going soon.

President York—You will get three reports in one, and they will take us in as a body at twenty-five cents a piece; that book alone is worth \$1.00; a full report of the Illinois State, of this convention, and of the National, all in one book. If you are a member you can get it. What will you do about it?

Mr. Hortsmann—I move that we join in a body, the Illinois State Association, at twenty-five cents a member. Have we money enough?

President York—I think the Secretary said we lacked about a dollar.

Dr. Bohrer—I don't know that that would strike me at all; I was down there to the convention; I can pay a quarter if they need it; but they said I was made a member of that Association, whether an honorary member or not I don't know.

The motion was seconded and carried.

Cyprian Bees.

"Has any one tried Cyprian bees, and how are they liked?"

How many have tried Cyprian bees, raise your hands? (Four.) How do you like them?

Mr. Cavanagh—I like them pretty well. We had some comb honey that we didn't use; I left it stand in the yard, forgot to bring it in. I was working up things around the yard, kind of lazily; was not paying very much attention as to how I handled the bees, and they were very much more interested in that comb honey than in me. I put the comb honey away, and they got busy on me. I had twenty-five stings, or thirty perhaps, before I got the hive I was working on under control. Usually they handle very nicely.

Dr. Bohrer—Did you ever get control of them?

Mr. Cavanagh—Yes, I did, most of them. Some of them were firmly imbedded in my trousers. I got them under control after a while. They were

supposed to be Cyprians and Italians. The original stock came from Texas; I think from the Atchley's, I was told by the man of whom I purchased the bees, but as to which were Cyprians, I could not tell by the markings. He assured me that certain of them were Cyprians.

Mr. Baxter—They have some good colonies and they have some pretty poor colonies. I know mine were Cyprians; they are very good. They breed up fast—make good strong colonies. If you open a colony in the morning, you have them following you over the yard all day, I don't care how long the day is; you can't get rid of them until night comes. They are the worst stingers I ever saw; I would rather handle a hive of hornets, any time, than Cyprians. I got rid of them.

There is no use to belong to a society unless you get some good out of it. I am in the market for some good Italian queens. I would like to get in touch with some breeder who can give me the genuine leather-colored Italian. I have bought some several times and am satisfied I got Cyprians for Italians, although the dealers I bought them of are supposed to be honorable, straightforward, square men. I believe they sold me Cyprians; they act the same way; they breed up the same way. They are fine bees, but I don't want them on my place. I would rather have lost a hundred dollar bill than to have had that stock on my place. I am in the market for some good Italian queens; the genuine characteristic of the Italian is docility.

Mr. Holtermann—I would agree with all that Mr. Baxter has said, though it is not very often that we catch Dr. Miller making a mistake, but when I read in the American Bee Journal that Cyprians and Italians were very much the same, I think Dr. Miller made a mistake.

There are one or two other traits the Cyprians have; they will keep breeding long beyond the time that it is really desirable that they should. The Carolians will tide through periods of no honey-flow and keep on breeding, which is an advantage, but when you get a bee that will keep on breeding long after the flow season, it gets to be a positive disadvantage.

Another thing, with smoke, you can handle the Cyprian bee if you are care-

ful and make no mistake, and at the right time she will handle just as well as the Italian, but if you happen to make a slip you cannot subdue them with smoke; it is quite impossible, and they will follow you, not only around the yard, but through two or three dark rooms, into a light room, and sting you.

Some years ago some one recommended to me a Cyprian queen mated with an Italian drone; those bees partook of the temperament of the drone; I found those bees as gentle as Carolians; you can't keep them there, and, as Mr. Baxter said, I don't want a particle of Cyprian blood among any of my bees; you can detect it, if only to a slight degree.

Dr. Bohrer—I want to supplement what the gentleman preceding me said with regard to the temperament of the Cyprians. I don't think that the average bee-keeper has any real use for them, because there are other varieties that are so much better. It would be hard for me to believe they didn't have a whole lot of stings instead of one a piece. I have smoked them, and have loaded them down with honey, but it didn't make them good natured at all. I caged the queen; put her in the hive, and left them, and in due time I liberated that queen, but got stung badly every time. The best thing is to give them an Italian queen and get rid of the stock as soon as you can. A hornet is not in it; they act half way decent. Cyprians are not half as decent as the hornet.

Mr. Cavanagh—I want to say one or two good words for the Cyprians. They are good honey gatherers, and they resist European foul brood very well; also the Caucasian bees are good resisters. They are equally as good as the golden Italian; however, I am not sure of my stock, which are the Cyprians and which the golden Italians, so my judgment does not amount to very much.

Keeping More Bees.

"Is it better to keep more bees, or to keep less bees better?"

Mr. Cavanagh—It is better to keep more bees, and keep them better; it can be done.

Mr. Holtermann—There is no doubt there are a great many bees in the country that should be kept better than they are.

Mr. Baxter—It all depends upon the capacity of the bee-keeper; if he can't keep more bees better, he better keep a few bees and keep them better; but if he is able to keep more bees, he should keep them and keep them better, and he will do better.

Dr. Bohrer—I am so much in favor of all bees being kept well; I don't like to sell a colony of bees to any person who does not understand the habits of bees and can take care of them. It is a sort of loss to bee-keepers of the country to sell bees to people who know absolutely nothing about bees. There is one of the fruitful forces at work in the spreading of foul brood all over the country. I won't sell a colony to my neighbor, unless he will learn how to take care of them and attend to the business carefully.

Mr. Kannenberg—That reminds me of a colony of bees I sold last spring to a lady. She was awfully inclined to learn about bee-keeping, but I tell you, that all summer long I had to do the business for that woman, to keep her a going; she would telephone me every little while: "Mr. Cavanagh, what is the matter with my bees?" and that is the way it kept on, and when they commenced to swarm I told her how to hive them, and the bees came out at 8 o'clock in the morning, and she thought they would go back themselves; she left them hanging until 11 o'clock, or about noon, and then the bees flew off, and 5 minutes afterward she telephoned me that "the bees are all gone; they didn't go back into the hive."

Mr. Wheeler—I don't like to take too much credit to myself, but I sent that lady to Mr. Kannenberg!

Pres. York—Mr. Hutchinson was asked to write a paper along this line. The secretary will please read it at this time.

The following is the paper written by Mr. W. Z. Hutchinson, of Flint, Mich.:

Intensive Versus Extensive Bee-Keeping.

Your Secretary has asked me to give a short paper on. "Is it better to keep more bees, or to keep less bees better?" This question could be answered in four words: "It depends upon circumstances." It may be worth while, however, to consider the circumstances.



W. Z. HUTCHINSON.

There is an inference in the query, and it seems to be quite generally believed, that the man who "keeps more bees" must, necessarily, neglect them. Not so. He may not give so much time to each colony as does the man with a few bees, but he gives all of the time that is necessary with his system of management. In fact, the man with several apiaries, one who is making a sole business of bee-keeping, is much less likely to neglect his bees than the man who has bees mixed with some other business. To the man who bestows every possible care on a few colonies of bees, the short-cut methods of extensive bee-keeping appear to be slipshod, while the extensive bee-keeper looks upon the plans of the former as fussy. The truth is, that both men may be doing what is best for them.

As regards intensive versus extensive methods, bee-keeping has often been compared to farming or gardening, and the illustration is a fair one. Where land is high in price, as near a large city, the farmer, or gardener, can't afford to produce the ordinary crops, such as hay, corn, or potatoes; he must raise strawberries, or some kind of garden-truck, and he can af-

ford to use every possible means of securing the greatest possible results from an acre of ground. He can plow and re-plow, and cultivate, and pile on the manure, because the products will sell for a large price, and the land costs so much that it is profitable to use it for producing crops, only by getting the greatest possible returns. A man better spend all of his time and money upon a single acre, for instance, then to spread them over two acres, because the rent for the additional acre would make a big hole in the profit. But let us go out West, where land is cheap; where the rent for a acre is almost nominal. After a man has put an acre into wheat or corn, using ordinary care, there is more profit for him to put in another acre in the same manner, instead of putting that much more labor upon the first acre. It is exactly the same with bee-keeping. The man with a few colonies on a city lot can afford to spend considerable time on each colony if, by so doing, he can greatly increase the returns. But let no one think for one moment that a great amount of care bestowed upon a few colonies can ever make the profits equal those from a large number of colonies cared for in

the manner that is best for the management of bees in large numbers.

Let us put the matter in another form: Let us suppose that a man is going to devote his whole time to the keeping of bees, desiring to secure the largest possible profits, in which direction can he work with the greatest hopes of success, that is, by "keeping more bees, or less bees better?" Perhaps this might depend upon what we consider "less bees" or "more bees." For illustration, however, we will suppose that the man has 100 colonies. Now, then, shall he spend his whole time on these colonies, packing them up in the spring; feeding them; shifting about the combs of brood; taking away individual sections as soon as finished, or extracting as soon as a few combs are filled, or any of the thousand and one things that are supposed to increase the crop—in short, shall he turn his whole time and talents and capital into securing the greatest possible amount of honey from 100 colonies, or shall his energies be turned in the direction of short-cut methods that will allow him to care for another 100 colonies, either in his home apiary, or placed out two or three miles? I suppose this is the real chit of the question.

I can answer it without theorizing. I can answer it in a concrete way.

For a score of years I have been visiting bee-keepers in this country, traveling from ocean to ocean, from Minnesota to Missouri, and those bee-keepers who have made the most money have kept bees in large numbers.

W. Z. HUTCHINSON.

Mr. Wilcox—That exactly agrees with my sentiments. I was about to express them before the paper was read. I have tried both plans; I kept 300 colonies of bees, and finally went down to 30, with the idea that I was going to keep them exceedingly well. When I had 300 colonies, I gave them better care and had a better yard per colony; when you get down to a very few colonies, your mind is on some other business; you are not thinking of your business, and not taking care of your bees as you should. If you are going to devote your whole time to bees, you want enough to occupy your time. If you have but a few colonies, you will have your attention and time diverted to something else.

Getting Extra Combs.

"What is the best method of getting extra combs?"

Mr. Wilcox—The presumption is, that they want extra combs in order to change from comb to extracted honey; that is usually the case, or they would not wish extra combs, and I have advised using full sheets in the brood-chamber; put the bees on that, and set the combs on that to extract from, placing the queen below until well established. In that way you have your old combs, if they are strong enough, to extract from. The objection to that is, that the old combs are supposed by many to give poorer grade of honey than clean white combs. I am not sure that is a fact, but, at any rate, I know people some times object to it on that ground.

Mr. Lathrop—I have a great many extracting combs in comparison to the number of colonies I keep. In accumulating those combs, I often do it by putting two full sheets of foundation in the extracting super, right in the honey season; instead of giving them a super of comb, I put in five combs and two sheets of foundation; that would be seven combs to an eight-frame super. In that way I have accumulated a great many combs—nice combs, too. I think there is no capital that pays better than to have a nice lot of extracting combs, in good shape.

Mr. Holtermann—There is a way I have used. We often have extracting combs, and want to get more. Now, we spoke this morning of spacing; that is, to use ten combs in space of twelve (for instance); if I want to get more in the honey-flow, I put, say, six combs in a super, and then the remaining ones, foundation. The bees will not work on foundation, and draw out that foundation as readily as where the spacing is beyond the normal. I suppose most of us know, but, for the edification of any one who might read this later, it is not advisable to put alternate foundation and drawn-out comb; the tendency is for the bees to draw out the comb into space where the foundation is, so we like to keep together the foundation. There is a point there in connection with that spacing that is important; as I said before, the bees will not work on foundation and draw out that foundation as readily where the space is beyond the normal, so that when I want

to draw out foundation, I space normal, and then, after that, spread. You will find the bees don't draw out that foundation when it is beyond the normal. It is a mistake, I think, to put nothing but foundation in the supers. The tendency is for the bees to swarm out; they are less inclined to do that than if you put partly drawn out comb and partly foundation.

Pollen in Extracting Combs Affecting Honey Flavor.

"Does pollen in extracting combs affect the color or flavor of the honey when extracted?"

Mr. Wilcox—According to my experience, there is not liable to be very much pollen in extracting-combs, unless the queen has access to them. If you use a queen-extracting honey-board, the pollen will not be placed in the extracting-combs, and it is natural for the bees to place their pollen below, if there is room for it. If you give them two-story hives, and give them access to two stories, you will find it full of pollen below, and honey above; they will not carry the pollen up into the extracting-combs unless the queen has access to it.

Getting Pollen Out of Combs.

"What is the best method to get pollen out of combs?"

Mr. Cavanagh—Where there is plenty of brood, the bees will clean it out, even if pollen be left in the combs over winter for some reason.

Mr. Huffman—I think that is "locality."

Mr. Wheeler—I would like to hear from Mr. Baldrige again, to find out something about how many tried his method last summer, that he gave us last year. I didn't try it. He said, take a toothpick, or anything of that kind, and disturb the pollen in the cell, and the bees would carry it out.

Mr. Baldrige—My honey is all comb honey, and I want my comb honey free from bee-bread. I use the shallow frames, but have used the Langstroth, and don't see much difference. I get a good deal of bee-bread, especially when working on dandelion, and I can secure those combs entirely free from bee-bread by looking them over, and breaking down the cell with a toothpick or a match. There may not be a dozen cells of bee-bread in a standard comb, but it is objectionable to sell a

comb with that bee-bread in, and it is a good idea to know how to have it removed by the bees.

Mr. Holtermann—This matter of pollen in the combs is quite an important point, and one man said that locality had something to do with it. I, at one time, thought that locality had something to do with it; it may, but I am satisfied that management has much more to do with it.

In telling you the way to get pollen out of combs, I am going to answer it in a way, at least, as I see it, that you won't expect to get the answer. And the way to get pollen out of combs is, to keep laying queens in the hive all the time, and have the bees use it up about as fast as they bring it in. By that, I mean that where colonies are run under the swarming impulse, there is an accumulation of pollen, and an excess, which is not the case where the queen is kept vigorous continually. I use a twelve-frame hive, but I have rarely seen a cell of pollen in the extracting supers. I remember, my father-in-law, who has now retired, was continually cutting out combs of pollen, and I thought it was locality; finally I satisfied myself thoroughly it was owing to a difference in management; he run on the swarming impulse; where a queen is kept vigorous, you don't have that trouble, as far as I can judge.

Mr. Cavanagh—I must agree with Mr. Huffman, that locality has a great bearing on the presence of pollen in combs. I ran bees one summer in Wisconsin; there is a great difference in the amount of pollen stored. The man I purchased my bees of said he melted up comb after comb of pollen; the question was, how to get it out. There is no question but that locality has some bearing on it.

Mr. Holtermann—From what source did the bees gather the pollen, mostly?

Mr. Cavanagh—I could not say from what source the pollen was gathered. The honey-flow there was short. I suppose, for want of something better to do, the bees stored pollen.

Mr. Huffman—I want to know how to get rid of it; with us, as Mr. Cavanagh says, in Wisconsin, we have that one great trouble. We put on the super, and when we come to get the bees ready for winter, we find the combs are nearly half full of pollen,

and we have to take them out and put in honey instead.

Mr. Holtermann—What system? The swarming system?

Mr. Huffman—No, sir, no swarms at all; I tried to avoid that all that I can, but it seems that, in our section of the country, we have so much dandelion; that is where they get this pollen. We have prolific queens, and all that, yet, in spite of it, they will fill that comb. I saw an article that said to soak those combs in water, and then give them to the bees; I don't know whether that is effective.

Mr. Wheeler—It has been my experience, by putting the bees in the winter in a damp cellar, the pollen would ferment; in the spring when you take them out, it becomes dry, and the bees take it out and empty the combs. I don't see that it hurts them at all.

Mr. Thompson—I find that the pollen stored in good honey-comb comes in a season of dearth; some seasons we have only about six weeks or two months of honey-flow, then we have a dearth, and the bees want to get active, and they get all the pollen they can find and fill up the combs.

Mr. Wilcox—I always have an excess of pollen; it comes after the honey-flow is over; I never trouble myself about it further than to see that I have honey instead of pollen to put in wintering colonies; I look out after that, and give them honey enough.

Mr. Huffman—What do you do with the comb that has pollen in?

Mr. Wilcox—The bees will take it out in the spring, when they go to rearing brood.

Mr. Cavanagh—The presence of pollen in the brood-chamber has a great bearing on bees in the spring; I believe Mr. Huffman spoke of taking that pollen out in the fall of the year. I came to grief last spring by not having the pollen in, at a time when the bees did not fly, and they wanted that pollen. I believe my colonies went down on account of the lack of it.

Mr. Huffman—I don't want you to undersatnd that I took it all out; I took it out in part. I leave a couple of frames with pollen in; but I would have hives that, four out of five, were nearly full of pollen. You know that is detrimental.

Divisible Hives.

"Has any one present had any experience with divisible hives, as per Mr. Heddon?"

Mr. Wilcox—I want to say that I am not authority on this subject. I tried it in the days when Mr. Heddon first invented the 'hive, and then abandoned it, because, all things considered, I didn't like it. It had some advantages, but more disadvantages; I completely abandoned it.

Mr. Wheeler—I wish to say that I have used the Heddon hive for over twenty years, and have at present 500 colonies of bees in them. I would under no consideration change and go back to the old style.

Dr. Bohrer—In the summer, it may be well enough to use it, but, for outdoor wintering, I never have found it satisfactory at all. Mr. Heddon sent me one from Michigan some forty odd years ago, and I didn't like the hive at all; I could not use it, and I think the majority of bee-keepers who tried it feel the same way. I don't say not to try it; I believe in trying a whole lot of things, and then you can see which you like the best.

Mr. Cavanagh—In view of the fact that management and hives go together, I would like to have Mr. Wheeler tell us something about his management of the Heddon hive.

President York—The question is, how do you keep bees, Mr. Wheeler?

Mr. Wheeler—That is a pretty deep question; that is too much for me. You would not have the time nor the patience to listen to me.

Mr. Holtermann—Before we leave this question, I may say that I, too, tried the Heddon hive, and didn't find it satisfactory; but we must always remember this: I realize it, that we may have made a failure of a thing because we didn't know how to run it. I found the same thing with the Carniolan bees. I pronounced them a failure once. I don't like to say so very often, but I have a sort of sneaking affection for that divisible brood-chamber system; I have not one, but consider the subject a question well worth studying.

Mr. Wheeler—I wish to say that I went into the Heddon hive rather extensively to start with; by years of careful work and study, my plan is entirely different than he gives in his book of handling hives; I would not

say entirely different, but it is different. A great many things that he omitted, I put in, and a great many things I have left out that he had in his book; but I use his hive just as he sent me a sample, over twenty years ago, and there is not a thing about it I would change today, except, possibly, the top and bottom-bars are a little shallow. A good many say, "How do you get those frames out of there?" Mr. Heddon didn't tell us. When I want to get those frames out to extract, I use the old method that Dr. Miller invented. Another point: I don't use the thumb-screw; I leave a space and crowd them against one another. I can get any frame out I please.

Mr. Whitney—What do you run for, extracted or comb?

Mr. Wheeler—Both.

Mr. Wilcox—The question was shallow hive—it was not the Heddon hive. A hive I made was of my own invention, on the Langstroth plan, to be used, one, two, three, four, or five stories high, as I chose. It was made just large enough so it could hold $4\frac{1}{4}$ -inch sections in the frame; you see, they are shallower than the Heddon hive, only about $4\frac{1}{2}$ inches, outside measure. I used them very much as I would use the Langstroth hive.

Mr. Wheeler—I want to speak of one thing, and that is just where so many of these men have fallen down with their divisible brood-chamber hive; it is the fact that they use a hanging frame. That closed end-frame is the whole secret of it. I don't shake my bees out; you can't do it; I could not. I have a way of taking my hive in my hand, and thumping one end of it on soft ground; change it, and thump the other, and in a short time you can take every bee out of the hive without injuring the comb; but you can't do that with the Langstroth frame.

Mr. Wilcox—Somebody in the American Bee Journal described the jouncing process, by "Rambler." I tried it, and have tried it ever since; when I want to take off extracting combs, I throw the empty comb down on that, and I have no trouble in getting out the bees.

Mr. Wheeler—The reason that I like this divisible brood-chamber hive, and its being shallow, is, because, with smoke, I drive the bees to the bottom of the super and open the top of the

hive. I can shake the whole swarm out while I am talking to you. You can't do that in the Langstroth hive; the bees get about the middle, and you can smoke and smoke, and there will be the young bees and, possibly, the queen, and you can't get them any farther down; that is the trouble with a deeper-frame hive.

Size of Hives.

"Which is the better, an eight or ten-frame hive? Or does locality make a difference?"

Mr. Dadant—Go on to the next one.

President York—How many here prefer to use an eight-frame hive? (Five.)

President York—How many would use a ten-frame hive in preference to an eight? (Fifteen.)

Mr. Whitney—Will you put the question, "How many prefer to use the nine-frame?"

President York—How many? (One.)

President York—How many prefer to use a larger hive than ten-frame? (Five.)

Mr. Kannenberg—If I intended to run for comb honey, I would prefer the eight; if, for extracted honey, I would rather have the ten. I think there are a good many that way.

President York—How many think locality makes a difference? (Five.)

President York—How many think locality does not? (Ten.)

Mr. Horstmann—I didn't ask that question, but I think it does not make any difference whether you use an eight or ten, either for comb or extracted—not a bit. I have used them for comb and extracted. If you want to get fancy comb honey, I think the eight-frame hives have a little advantage. If a bee-keeper is a good, big, strong man, it would be all right for him to use a ten-frame hive; if he does not want to carry such a load, then the eight-frame would give him just as good service.

Mr. Cavanagh—The question with me is, if there were eight ten-frame supers set out on the ground, or ten eight-frame supers, which would I rather carry in? I would carry in the eight ten-frame supers, that is why I want the ten-frame hive.

Mr. Anderson—I have used eight and the ten for about forty-two years; the past summer my ten-frame-hives colonies did the majority of the work.

Mr. Holtermann—I think if a bee-keeper doesn't want heavy-weight hives, he should go into a poorer locality!

Mr. Cavanagh—Answering Mr. Holtermann, I would say that it is not the amount of honey I object to carrying in, but I don't like to carry in those eight-frame hives; it is the lumber I object to.

Mr. Holtermann—This gentleman is a man after my own heart; he feels enthusiastic about this subject. The time was when I would admit that an eight-frame hive was better for comb honey than a twelve or larger, but I won't admit it any longer, for the simple reason that the larger hives—you take an apiary with twelve-frame hives, and take one with eight-frame hives, and you will have just as much, if you manage right, in proportion, for full twelve-frames as eights in the fall of the year; that being the case, you winter equally as well, and will have more bees to begin with in the twelve than in the eight; therefore, the bees can rear, in proportion, more brood, and you have more bees there ready for your comb honey-flow, or extracted, whichever it may be; you have as many supers full of comb honey from the ten as the eight, and, of course, there are more sections in the ten. I think this gentleman is perfectly correct, and, as Mr. Anderson says, the ten-frames are better than the eight.

Mr. Wilcox—I was going to say I endorse what Mr. Holtermann has said, and there is one point we might emphasize, I think, in the ten-frame hive—there are more bees; they have more honey in the spring to commence with; they require less care, and watching, and attention; rearing more bees, when the honey season comes they will store more honey, and I don't see any disadvantage whatever in having the ten-frame hive in preference to the eight. The eight-frame hive, for the production of comb honey, in a district where all is white clover, might be preferable, because you must get just as many bees as you can before the honey harvest commences; but, in a locality like that in which I live, where the harvest is more or less through the whole season, from the middle of June to the middle of September, I will have the larger hive. I am satisfied as to this, because I have

many of both kinds in use all the while. I get more bees, consequently, more honey.

Mr. Horstmann—I can't see any reason in the world why you cannot get as many bees in the eight-frame hive as in the ten, working on Dr. Miller's plan. Any one who knows anything about getting bees ready for the honey-flow will not confine the colony to eight-frames. I never do. I have used the double hive-bodies in the spring until the honey-flow starts. The question is, what constitutes an eight-frame hive?

Mr. Cavanagh—We use two bodies—ten-frame or twenty-frame hive—to get our bees in shape to get honey when the honey-flow comes. I don't think the eight-frame hive is large enough to build them up.

Mr. Whitney—I want to refer to the report of last year's proceedings here; we settled that question about an eight or ten-frame hive last year; refer to last year's report, and you will settle that question!

President York—Which is the better, the ten-frame Langstroth, or ten or twelve-frame Jumbo, regardless of weight? How many consider the ten-frame Langstroth the better? Raise your hands! (Seven.)

President York—How many think the ten or twelve-frame Jumbo the better? (Six.)

Dr. Bohrer—I voted on the last question; I should have voted on the other the same way. For some purposes I like the ten-frame Langstroth best, and for other purposes I prefer the Jumbo. The Jumbo is the best hive for wintering on a summer stand. I never carry one of them into the cellar; pack them out-of-doors, and the stores are in the rear of the bees and above them, so I never had a colony starve to death with plenty of honey in the hive, because it is above them and in the rear of them. I have lost bees in both the eight and ten-frame hives. If I intended carrying the hive into the cellar, I would prefer to carry an eight-frame. Then I have another hive—a fourteen-frame. That is too big to carry in the cellar, so I pack them carefully, or else watch them from time to time during the winter. I prefer one for one purpose, and another for another purpose.

Right here I want to say, I have to start in a few minutes; my train

leaves for Kansas City at about 6:00 p. m. I am glad that I have had the privilege of meeting with you one time more, and I think it has been the most interesting session I have ever been present, out of the three. Everything that has been discussed has been discussed in a very able way, and in an exhaustive manner.

The question, above all others, that brought me here, is one that I think is of most importance to American bee-keepers today, and that is the matter of foul brood. I do admire the way you have handled this question here. There has been no antagonism manifested; it has been handled by men in a becoming manner, and the resolutions you have adopted are certainly reasonable, and I firmly believe you are going to get the law you want; you may not get exactly the law that will suit you at first. We have now, in the State of Kansas, a banking guarantee law; while we are getting along with it, it is not what we want, and when our Legislature meets, we will have it amended. You can do the same with your bee-keepers' law. If you don't get just what you want, go before your Legislature and ask them, in a becoming manner, to give you what you require; state what your needs are to them very plainly, and you will get attention.

I thank you, one and all, for the attention you have given me, and the invitations I have had to meet with you, and if I never meet with you again, I wish you all well.

President York—How many are at this convention that were at the first meeting of the Northwestern?

Mr. Baldrige—I don't remember, but I think I was.

Mr. Wheeler—I think I was.

President York—Mr. Baldrige and Dr. Bohrer were at the first meeting of the National, in 1871.

Super for Jumbo Hive.

"In the use of the Jumbo hive, is it advisable to use a ten-frame super or the eight-frame?"

Mr. Holtermann—If anything, I would use the wider.

Mr. Wilcox—I would use the wide super, if I used the wide hive, even if I had to run the sections crosswise of the frames.

Mr. Huffman—In using the wider, what would you use for cover, the

same as over the hive, or have extra? Will the same cover fit both?

Mr. Holtermann—I use the same. The question is, the matter of lessening the width; I said, if anything, I would use it wider, not narrower.

Doolittle Method of Preventing Swarming.

"Has any one tried the Doolittle method of preventing swarming? Also, is it practical in running for extracted honey in out-apiaries?"

President York—Raise your hands, those who have tried it! (One.)

Mr. Cavanagh—I was not just sure whether you said extracted or comb honey.

President York—Extracted.

Mr. Cavanagh—I tried it with comb honey, so that I could not answer that.

Alfalfa As a Nectar-Yielder in Illinois.

"Is there any nectar in alfalfa clover in Illinois?"

Mr. Whitney—I visited an apiary at Barrington last July, and the bees were working on alfalfa very vigorously. I was surprised to see them working it as vigorously as they were.

Mr. Holtermann—Were they storing?

Mr. Whitney—Yes, the man who had charge of a number of colonies there told me he thought he could take off a thousand pounds then.

Mr. Thompson—In 1908 there was alfalfa enough gathered by some colonies of mine so that the alfalfa flavor was pronounced in the honey. I was not looking for it; therefore, I don't know where it came from, but the flavor was there.

Mr. Kannenberg—I have tried it; I had a little experience. I sowed some alfalfa, and watched it patiently to see if the bees would go at it, to see if there was any nectar in it. I didn't see five bees on that batch of alfalfa. I don't think there is any alfalfa in this part of the country.

Mr. Holtermann—I would say that there is a small field of alfalfa near us, and my neighbors say that they repeatedly saw the bees thick on it. The question is, do they gather the honey when they are working on it, or are they simply hunting for it?

Mr. Huffman—I will say this in regard to alfalfa: As a rule, when it first blossoms, there is no honey in it; about the time you want to make the hay and cut it down, and then let it

stand a couple of weeks, you will find the bees will gather quite a little honey from it.

Mr. Holtermann—Don't you think the season makes a great difference?

Mr. Huffman—I do.

Mr. Holtermann—With us, in Ontario, they worked on it this year quite a little, and I think about four or five years ago, they were on it quite conspicuously, and the other years you could scarcely see a bee on it; so I am satisfied it is probably the same here as with us. Once in a while the bees will work on it, but with us it is only now and then—scattering seasons—where they work on it.

Mr. Trickey—I live in an alfalfa region, and have for twenty-odd years been in the bee-business. I have seen alfalfa fields, with bees very thick on it, the first crop, and just across the wire fence you could not find a bee in the next field; maybe, on the second crop, the bees would be busy in the other field, and there would be none on this one; so, as to whether alfalfa will furnish honey or not, I think it depends a great deal upon the condition of the soil, weather conditions, etc.; moisture, and other things, all combined.

Mr. Kannenberg—I knew of the time when it was stated here in this convention, that alfalfa would not have any nectar on this side of the Mississippi.

President York—I remember that.

Late Re-Queening of Colonies.

"Is it advisable to renew queens in September, October or November, when queenless, or wait until spring?"

Mr. Wilcox—If they are queenless in September, I should give them a queen. I would not in November, because it is too cold and too late.

Producing Honey Without Separators.

"Has any one present any experience dispensing with separators when running for comb honey?"

President York—How many produce comb honey without separators? Raise your hands. (Three.)

Mr. Whitney—I have not very much to say; I have said, two or three times, through the papers what I have to say on this subject. I see in the American Bee Journal, Mr. Morrison is quoted as having stated that good section honey can be produced without separators. I

read a paper here last meeting on that subject, and I quoted Mr. Morrison, and I see he has stated it again, that it can be done. I know it can be done. I have sold thousands of pounds of it, produced without separators; but you can't do it with 1½-inch or 2-inch wide section; the thinner sections will do it, if you have a good, strong colony of bees, and a proper honey-flow, and your supers are protected from the weather. Some times we have chilly nights in June, and the bees will shrink away from the outside sections to the center in single-board hives; but if you will put protection around those supers, they will work right up and build the combs straight.

Mr. Holtermann—Would you recommend that?

Mr. Whitney—I don't say I would for the average bee-keeper, but it can be done all right.

Mr. Holtermann—If it depends on the weather, the honey-flow, and so on, over which you have no control, is it worth while to take the risk?

Mr. Whitney—If the bees build the combs straight down from side to side, and the flow stops, the sections on the outside will be just as good as the center ones; of course, if you have a poor honey-flow, you would not be very likely to get good, straight comb honey, anyhow.

Mr. Holtermann—The greatest factor in it is the narrow section.

Mr. Whitney—Yes, a section that will produce a cell just about deep enough for the bees to rear their brood; then they will build up straight every time. It can be done all right.

Mr. Wilcox—I want to say I have tried it pretty thoroughly, but I would not recommend anybody else to do it. I don't think it advisable for a convention to go on record as favoring the production of comb honey without separators. It can be done in a good honey-flow, with strong colonies, but that does not continue always; strong colonies are not always strong, and you have got to be very careful if you try it, or you will have a good many imperfect sections.

Mr. Cavanagh—Will some one please tell us what the comparative yield is between having comb honey produced with separators and without separators, and what the effect upon swarming is of the two different plans; if

there is some one who has tried it, I would like to hear from them.

Mr. Wilcox—I can only say I don't know, although I have tried both plans a great deal in my life-time; I never saw any difference.

Mr. Whitney—In saying that comb honey can be produced without sections, I don't say I would recommend it to the average bee-keeper. I think I would not, but where anybody has plenty of time, as I have, and always have had, ever since I kept bees—I spend most of my time in the bee-yard, studying the bees—he can produce a good comb honey without separators. Mr. Hand does it; Mr. Morrison says it can be done; but, as I said before, I don't think I would recommend it to the average bee-keeper, because he has not the time; he does not spend the time in his yard to give it attention.

Honey in a Beer-Keg.

“Will bees produce as much honey in a beer-keg as in an eight or ten-frame hive?”

President York—Bees in this country don't use beer-kegs!

Mr. Huffman—I know of a man that used a two-gallon jug; that is not a beer-keg, but it would hold beer!

A Member—No, certainly not; tell us which has the largest capacity, and I can tell you which would produce the most honey.

Fall Breaking of the Bee-Cluster.

“Is breaking the cluster of bees late in the fall injurious to a colony?”

Pres. York—How many think it is? (Four.)

Double Hive For Wintering Bees.

“What are the advantages of the double-hive chamber for wintering?”

Mr. Wilcox—I am decidedly in favor of double chamber for wintering, if I winter bees out-of-doors; I would not do it in the cellar.

Mr. Whitney—I have always felt that a division in there was a detriment; if I could make it practical I would cut it out.

Mr. Holtermann—That is one reason why I thought I would like the hive.

Mr. Wheeler—There is too much ventilation through there; that is just my notion, however; I have no proof of it.

Mr. Holtermann—I know there are

thousands who have that kind of hive, who argue that that was an advantage, in that the bees could move about and change places in the cluster, which they cannot do, for instance, in the hives I use—the Langstroth as well. I have felt disposed to admit that it was superior to the Langstroth frame which I use. I would like to hear something more on that.

Mr. Wheeler—I winter bees out-of-doors; when I first started in I began with some of those, and I think Mr. Heddon wrote to me if I would not send him a testimonial. I didn't answer him because I didn't know. I watched the thing closely, and of course when the hive is new and the frames are new and no bur-combs between the frames, I think there is too much ventilation; the bees didn't seem to work as well in those hives as they did in the others (the Langstroth); as soon as they begin to get old, the combs are more or less connected; there is not as much ventilation, and the bees are drawn more closely together; where the tops of the frames are covered with bur-combs, they are almost the same as solid frames, except the holes.

Mr. Holtermann—Might not your method of packing have a little bearing on it?

Mr. Wheeler—It might.

Mr. Wilcox—Don't more bees smother in winter for want of air than those that suffer from too much ventilation?

Fall Feed for Bees.

“How much honey is equivalent to twenty pounds of feed—half sugar and water—for fall feeding?”

Mr. Holtermann—Depends on how you do it.

Mr. Thompson—I estimate about 12 pounds.

Mr. Holtermann—I don't think there would be that much. I think anybody who would be foolish enough to use half sugar and water to begin with, they would make a mistake, for their fall feeding; for fall feeding I would not take anything less than two pounds of sugar to one of water, and then feed that as rapidly as possible.

Mr. Huffman—How early do you feed?

Mr. Holtermann—I don't think it is wise to feed too early, for this reason: If you feed early, sugar syrup is the best possible stores you can get for wintering. Where you feed, as in our

locality, the early part of September, and you have part sugar syrup and part honey stores, the bees are using up the best stores before they go into winter quarters, so I would prefer to feed as late as possible. This year I fed as late as the last week in October, and where twenty pounds of feed is used, half sugar and half water, that would only mean ten pounds of sugar. I don't think the final quantity that bees store under good conditions is more than the amount of sugar that you feed, and when you use half sugar and half water, it takes more to ripen that, and therefore there would be more waste.

Mr. Cavanagh—There is the advantage of storing that feed in the combs. I would like to hear from any one who has had any practical experience, to show whether the honey has to be taken in by the bees, and replaced in combs, or whether it is just as safe to put that good thick syrup in the combs and let the bees go directly on it.

Mr. Holtermann—I have never done it; I believe it is.

Mr. Cavanagh—The point is, that if we can do without the bees handling that honey for syrup, we are at a great saving, because they will consume a lot of it in storing from combs in the ordinary way, which they will not in the other.

Mr. Huffman—I have always fed sugar syrup, half and half, and have good results; when it comes to the amount they use up, I am unable to say.

Mr. Holtermann—It would do no harm to give here the way in which I feed for winter. I have a honey-board on top the hive, and it has round holes in it; then I take a two-quart jar (what we call a jam-jar); I have a finely perforated top instead of the glass top; that holds five pounds; six of those would make thirty pounds—a good colony of bees would take that down in twenty-four hours. I don't know any better method of feeding. I never tried filling the combs except in the spring; but I know this, by using tartaric acid, that so changes that honey I have had it granulate solid in the jars. Now we know it is quite a different process for the sugar to crystallize, but I showed experienced bee-keepers that jar, at a distance; I opened the jar and I deceived them; they said, "That is honey." But when you come to taste it, you can tell it is sugar syrup. The

tartaric acid changes the nature of that sugar so that it does not crystallize.

Mr. Cavanagh—The way I feed bees in the fall is to invert the cover; we have a cover with a ledge some two inches; invert the cover on the ground—that cover is previously lined with oil cloth—pour in twenty-five or thirty pounds of syrup; (put in sufficient leaves so the bees will not drown). I have never tried feeding by filling combs for winter storage; I would not advise any one else to go into it on a very large scale, either; there are difficulties there that might show up.

Mr. Thompson—I would like to have an expression as to the different kinds of feeders used, and the manner of feeding, and the time when they feed for fall feeding.

Mr. Cavanagh—I have used the feeder below the hive; I lay the cover on the ground and place the hive above, so that the feed is taken from below instead of above.

Mrs. Holbrook—I would like to ask, if he uses the feeder below, if he uses the ten-frame Jumbo, or the 8-frame; it makes a difference in lifting that; I had the experience of trying to put the feed below, allowing space in front of the super for the bees to crawl over. I found difficulty in handling large frames. Of course there is some anxiety about cold weather.

Mr. Cavanagh—I don't know whether I clearly understand Mrs. Holbrook; the reason I started in to use those feeders below was because the weather was so cold I could not feed above, the year I tried it.

Mr. Holtermann—It takes two persons to lift a Jumbo; more than that, the bees are on the bottom-board, and if you are feeding late, you have the conditions of the weather to consider.

Mr. Cavanagh—I would say that there is a very serious objection to using the Jumbo and any heavy hives, for some; for a lady bee-keeper, especially, there would be a serious objection with those hives, that the hives have to be lifted from their stands, and then lifted again to be replaced on the stands.

Mrs. Holbrook—For a man, either, for that matter. A man has no business to lift such a heavy hive; it is too heavy for him to lift, too.

Mr. Holtermann—I have a good many of those bottom feeders; they are made with partitions in, and I find them very

good, next to the method I have spoken of. I might just explain: You see a jam-jar, almost any one can get, and the only added expense is this round piece of finely perforated tin or zinc—you put that on top in place of the glass top; when you invert that, it is within one-fourth of an inch of right where the cluster is. If you have not got the honey-boards I speak of, you can use (and I have used them) a couple of quarter-inch sticks, and set the jar on top of that, so the bees can go under, and then you can pack leaves around, and the bees get right to that syrup, and I don't believe there is a cheaper or better method of feeding bees than this. I am very much pleased with it.

Mr. Wilcox—When I extracted last time—I generally know when the last extracting comes—I save out sufficient quantities of well filled and sealed combs; set them aside, and I go over the apiary and hang in the combs, and take out the empty combs, and reserve the balance for spring. I go over them again and remove the empties and put in the filled combs; it is better, because it is less work.

Mr. Thompson—I would like to ask Mr. Holtermann if there is not a cheaper feeder than his, on the same plan? Take a ten-pound pail and punch the top full of holes, and you have the cheapest feeder I ever saw.

Mr. Holtermann—A good deal of trouble in punching the holes and getting them uniform.

Mr. Huffman—I have tried all the feeders imaginable, and I must confess I find nothing, to my notion, equal to the Miller feeder. I have tried the ten-pound tin pail—have, probably, a hundred of them—but have abandoned them, and, with all of them considered, I will take the Miller feeder in preference to any of the others. In the spring of the year, the feeder may not be so good, but, for stimulating in the fall, and feeding bees for winter, the Miller feeder beats anything else I have found. As to Mr. Cavanagh's way of feeding, do not those leaves dissolve some of the syrup, and the bees don't get all of the syrup out of the leaves?

Mr. Cavanagh—There is no waste, because the cattle will come around and eat those!

Mr. Huffman—With the Miller feeder, you have no waste. I think, next

to the Miller feeder, is the ten-pound pail, and they are easily made, easily filled, easily sealed; you don't have to make your hive perfectly level.

Refining or Bleaching Dark Honey.

"Can dark honey be refined so as to make it white, without injuring the honey?"

Mr. Huffman—I don't think it can be done; that means either extracted or comb honey, I suppose.

Mr. Wilcox—I don't know anything about that subject myself. Some years ago, Judge Crotty, a very prominent bee-keeper, suggested it could be done; he was a very intelligent man; had a good deal of experience in the business. I have waited all my life-time to see it brought up, and see if somebody could tell us how dark honey could be changed to white. Can they not change molasses and make it a lighter color?

Feeding Bees in March.

"When bees are in need of feed in this locality, during March, what feed and feeders are the best to use? It is hereby taken for granted that the month of March is a very mild one."

Mr. Thompson—The best "feeder" would be the honey-knife at that time of the year.

Mr. Huffman—I think locality has a good deal to do with that.

Mr. Holtermann—I don't think we would be satisfied that the honey-knife was the best "feeder." That would imply that they didn't need feed. I would say, at that time of the year (and I fancy your climate is much the same as our own), the best thing would be to feed them something in the shape of sugar—solid sugar. You can't, at that time of the year, feed liquid; it would tend to make the bees fly out of the hives and to be lost; therefore, I recommend a cake of sugar.

Wintering Bees Outdoors.

"What is considered the best way to winter bees in this locality, without chaff hives—outdoor wintering?"

Mr. Wilcox—I think Miss Candler's method is the best.

President York—May we hear from Miss Candler?

Miss Candler—The way I like best, is to wrap them in tar paper—around the hive; wrap the paper snugly, and as tight as you can.

Mr. Holtermann—How many years have you been wintering bees that way?

Miss Candler—Seven or eight years.

Mr. Horstmann—It seems foolish to answer that question like that. I want the convention to decide which is an eight and which is a ten-frame hive. I consider the **body** that is used, regardless of the number, is what the hives should be named after.

President York—How many agree with Mr. Horstmann on that? (Twelve.)

Mr. Horstmann—I hope that will get in the report.

Mr. Kannenberg—Eight or ten-frame hive—I don't understand. Does he mean, if he puts two hives on top of each other, that is meant to be an eight-frame hive, also; if two hives are put on top of each other?

Mr. Huffman—No, I don't believe that; an eight-frame hive will always be an eight-frame hive, and if you put one on top of another, that will be 16 frames.

Mr. Holtermann—I would like to ask what authority this organization has to decide that question for every one?

Mr. Horstmann—I consider this convention supreme; anything they say is law in these matters!

Mr. Holtermann—Of course, it makes me smile when advocates of eight-frame hives begin to want to use, as a brood-chamber, combs in the super. I think the hive is generally considered that part which is the brood-chamber; and the super is that which is for the surplus honey; and, therefore, when an eight-frame-hive man wants to begin to use the super as the brood-chamber, that moment I begin to smile, and say he admits that a ten, twelve, or more, frames are better than an eight. I think a proper definition for a hive is that portion which is used as the brood-chamber, and the rest is surplus; we call the one "hive" and the other "super;" therefore, that is a distinguishing mark in the number of combs which happen to be on the bottom-board.

Mr. Kannenberg—As Mr. Holtermann says, that is called "brood-chamber," the first hive, but the way Mr. Horstmann says, he puts that on top of the hive to make it strong; now, if the queen goes up in the second hive, what is called super, that is also a brood-chamber, what will you call it then?

Mr. Holtermann—Jumbo!

Mr. Cavanagh—I would like to ask Mr. Holtermann what right he has to say the brood-chamber of the hive is the hive, or the super-chamber is the hive?

Mr. Holtermann—All you have to do is to go to your bee-literature; your catalogue of bee-keepers' supplies. What is known as the body of the hive is usually called the brood-chamber; the supers have a separate distinction. When I ship my supers, I don't ship them as hives, but ship them as supers.

Mr. Cavanagh—In Root's catalogue, is the super not a part of the hive?

Mr. Holtermann—You would say, according to that, the hive with the upper story is a sixteen-frame hive, where two eights are put together, but you don't.

Mr. Cavanagh—I would say it is two-story eight-frame hive. I would think an eight-frame hive would be a hive, each section of which contains eight frames. There is no limit to the number of frames we can use in a hive; in one apiary we might have one, two, three, or four-story hives, but we would be running eight-frame hives, perhaps, in all.

Mr. Holtermann—The very fact that you call them eight-frame hives indicates the distinction I spoke of.

Mr. Cavanagh—Yes, sir.

Mr. Holtermann—I want to be fair; let's be fair; if it is called an eight-frame hive, that would designate the brood-chamber was what we call the hive, primarily.

Mr. Kimmey—Two eight-frame hives may be equal to a sixteen-frame hive, but may not be the same thing.

Value of this Convention.

"In a single sentence, give your impression of the value of this convention to you."

Mr. Cavanagh—Financially, in dollars and cents?

President York—No, you might be out dollars and cents, coming here. Is it worth attending?

Mr. Cavanagh—I think there has been a great deal of "sense" about it.

Mr. Horstmann—I will say I got a great deal of satisfaction today, even on that hive question.

Mr. Whitney—In renewing old acquaintances, if nothing more, it has been very valuable, I think. I would not say that was all.

Mr. Kimmey—To me it has been one of the most pleasant and most valuable day's work I have done in a long time; not only in the things that I have learned, but in the feeling of fellowship that has been aroused within me, and the desire to go among my bees and do lots of things I have not done before.

Mr. Kannenberg—I know it has done me a great deal of good. I have been waiting for this for the last two months. I know it does me more good than what it costs me to come here.

A Member—In exchanging ideas and methods, this convention has been of great benefit.

Mr. Wilcox—In awakening enthusiasm in the pursuit, for various methods; at the same time it has shown a good fellowship existing among us; it has brought out those social qualities in us which are worth more to us than money.

Mr. Holtermann—I am sure that it has been a satisfaction to me to come back here and meet old faces, and new ones. I have gone to a good many conventions, and I generally carry home something that is of profit to me, and I will from this convention. I can't help but realize that it has been quite a number of years now since I attended my first convention in the United States—that was the National, held at Rochester at that time. The years roll by, and, while we enjoy bee-keepers' conventions, and it is our right and privilege to study our business, I often think of the passage in the Scripture which says: "Be diligent in business;" yet, over and above all, there is this to remember, that we are in this scene but for a short time—"What shall it profit a man, if he gains the whole world and loses his own soul?" So that, in coming to these conventions, I realize, from year to year, that the time I will be here is short, and so it is with many of us who are here. So far as the bee-keeping standpoint is concerned, I enjoy the conventions, and I have carried home, and will carry home from here, something that is instructive to me. It is a good thing to disagree on some things; it brings out the points for discussion, and it does not hurt to do that with energy, yet with good feeling, and I am sure that only the best of good fellowship and good feeling

have been manifested in this convention.

President York—Dr. Miller left this question to be asked. He says, "This is the convention of all."

Mr. Huffman—I wish to say this, in regard to attending this convention: It is my first, and I am well pleased with the questions that have been brought out; the way in which they have been discussed; the information I have gathered; for the knowledge we can take home with us, and the things we can put into practice. Things have been brought out that I had not thought of. By exchanging views and thoughts, we gather this knowledge, and I will say it has been pleasing for me to have been here.

Mr. Holtermann—I believe there was no resolution, as yet, passed, that this organization would endorse the invitation of the Ontario Bee-Keepers' Association for the National, to be held in Toronto in 1910. If you decide to go there, we are going to have specially reduced rates; it will be at a time of the Toronto Exhibition. We will promise you a good time. It has been nearly fifteen years since it was held in Canada. I would like you all to do all you can to have it go there, and we want a good meeting. If you come to Toronto, we will try to make it as pleasant as possible.

A Member—How far is it from Chicago?

Mr. Holtermann—It is 500 miles to Buffalo; I came for \$14.55 to this meeting. At that time of the year you can go by rail and by water. I am quite sure you will have a successful convention if you come to Toronto.

Mr. Kimmey—I move that this Association endorse the invitation of the Canadian bee-keepers for the meeting of the National Association. I make that motion simply for the purpose of getting it before the body.

The motion was seconded, and carried.

Mr. Macklin—I missed part of the meeting today. I would like to know who was appointed bee inspector.

President York—The Illinois State Association elects the State bee inspector. The late Mr. J. Q. Smith was the inspector, and at the meeting in Springfield, two or three weeks ago, Mr. A. L. Kildow, of Putnam, Ill., was

elected to fill that position. Mr. Kildow is a large bee-keeper in that part of the State, and has had a great deal of experience with foul brood. He assisted Mr. Smith in his work, and I should judge, from what was said in Springfield (and I think he was almost unanimously elected), that he was

considered the best man, next to Mr. Smith, or maybe better, so far as I know. ,

A Member—I move that we adjourn, subject to the call of the Executive Committee.

The motion was seconded, and carried.



HON. N. E. FRANCE, Gen. Manager.

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Time Expires 1912.

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Time Expires 1913.

R. A. MORGAN.....Vermillion, S. Dak.

E. F. ATWATER.....Meridian, Idaho

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PROCEEDINGS

OF THE

FORTIETH ANNUAL MEETING

OF THE

NATIONAL BEE-KEEPERS' ASSOCIATION.

Held in the Library Building, in Sioux City, Iowa,

Wednesday and Thursday, September 22d and 23d, 1909.

On Wednesday at 11 o'clock a. m., at the request of the President, the Vice-President, Mr. George W. York, of Chicago, took the chair and called the Convention to order.

On motion of Dr. Bohrer, duly seconded, Mr. R. A. Morgan was appointed Secretary pro tem.

The following Committees were appointed:

Committee on Program—Mr. N. E. France, General Manager, Platteville, Wis.

Committee on Rules—Messrs. Geo. W. York, Illinois; O. O. Poppleton, Florida, and C. J. Barber, Iowa.

Committee on Resolutions—Messrs. C. P. Dadant, Illinois; W. P. Southworth, Iowa, and P. B. Ramer, Minnesota.

Committee on Questions—Messrs. R. A. Morgan, South Dakota; M. E. Darby, Missouri, and J. P. Goodwin, Nebraska.

After the appointment of these Committees the Vice-President left the chair, and the same was taken by the President, Mr. George E. Hilton, of Fremont, Mich.

Dr. Bohrer—Speaking with reference to the next place of meeting, I think the matter should be gone into carefully, and instead of holding the meetings at different places extending over long distances there should be some central place selected, and the Annual Meeting should be held there from year to year.

The President—This Association represents a very large membership, and there are probably more people engaged in the business of bee-keeping than in any other business in the world, and unless we oscillate and change about from one point of our great country to another, but very few of those engaged in the business are going to attend. I would not be in favor of locating it in the geographical center of any one State, but I would have the meeting moved about from one side of our grand country to the other, so that the greatest possible amount of good may be received by the greatest number. Five years ago we were at Los Angeles, then at San Antonio, Texas, then at Harrisburg, Pennsylvania, and last year at Detroit, Michigan, and today we are here. Next year we will be somewhere else. We try to do these things in accordance with the wishes of the people. I am talking now as a Member of the Executive Committee. We try to hold these Conventions where we think the best results will be accomplished. I believe the Committee has acted conscientiously and have wanted to do the best they could.

Mr. Ramer—Mr. President, I would

ask whether it would be appropriate to hold the next Convention in connection with the Minnesota State Fair. I hope the Executive Committee will consider that matter. We have a good many bee-keepers in Minnesota and Wisconsin. The State Fair is held between Minneapolis and St. Paul. It would be for the Committee to decide whether they hold the Convention in one of those cities or on the Fair Grounds.

The President—These matters will all be considered by the Executive Committee very conscientiously, and they will be glad to receive suggestions from both the United States and Canadian brethren.

Mr. Dadant—If the question is still open, I would like to state personally that I can see a great deal more advantage by the Association meeting at different places than by meeting all the time at some center—always at the same point or near the same point. There are some who cannot afford to attend the Conventions at long distances, and if the meetings are held in the different localities they will be glad to attend them and bring to the meetings their ideas. The men who attend Conventions, and who live far away, will attend no matter where the meetings are held. They also will bring their ideas. If the members met at the same spot every year, the same men would attend, the same men from far away would be there, and nothing new comparatively would be brought forward. When we go to a strange place we have people attend who have different methods and different ways of doing things, and who bring us their ideas, and in return get ours. We thus make a greater amount of exchange of views. Therefore, I believe it is very much better to have the Convention in a new place each time. We have at times to go back to the centers. There are many bee-keepers who are very anxious to have the Convention in their neighborhood. There are parts of the country where the Convention has never gone. There are men who dislike to become members of the National because they think they are not treated right. We would, therefore, do better if we tried to hold the National Convention first in one section and then in the other. I think the President is exactly right.

On motion of Mr. York, the Convention adjourned to meet at 1:30 p. m.

AFTERNOON SESSION.

At 1:30 p. m. the President, Mr. Hilton, took the chair, and, having asked the Convention to come to order, called for the report of the Committee on rules, which was presented by Mr. York as follows:

1. Ordinary parliamentary rules are to govern the proceedings of this Convention.

2. Time of opening sessions: 9 a. m., 1:30 p. m. and 7:30 p. m.

3. Discussions: No one to speak longer than five minutes on any one subject, nor more than once, unless with consent of the Convention.

4. Each speaker will first address the President, and be recognized by him by name or number before proceeding, so that the reporter may know just who is speaking.

(Signed) GEORGE W. YORK,
C. J. BARBER,
O. O. POPPLETON,
Committee.

On motion of Mr. Dadant, seconded by Mr. Kretchmer, the report of the Committee on Rules was adopted, and the Committee discharged.

The President then addressed the Convention as follows:

To the Bee-Keepers of the United States and the Dominion of Canada.
Greeting.

In endeavoring to prepare something in the form of an annual address for the fortieth annual meeting of an organization representing two of the greatest nations on earth, I can not but feel my incompetency for the task.

Then, too, the varying conditions contained in these two vast domains make it practically impossible to say anything except in a general way, extending as we do from the Tropical conditions of our southern possessions to as near the Arctic circle as the industry of our chosen pursuit can be made profitable. No Association on earth covers so many miles of territory, or such a wide expanse, in which agriculture is the leading feature. And in what I shall say I shall be largely indebted to our United States Department of Agriculture in

general, and to Dr. E. F. Phillips, in particular.

Few people realize the magnitude, importance and possibilities of the present bee-keeping industry in the United States. Those who are conversant with the pursuit, and even those who are extensively engaged in it, generally fail to comprehend what an important factor in the agriculture of the country apiculture is as a whole, or how much the honey bee, by collecting nectar and storing to produce a commercial product, is instrumental in saving our resources. The All Wise Creator, in placing the drop of nectar in the corolla of the flower, intended that it should attract the insect kingdom for the purpose of fertilization and cross fertilization. But man has taken advantage of these conditions, and in causing the bee to convert this wise provision into an article of commerce, has assisted in carrying out this wise provision. And, although the total value of the bee products is small as compared with the value of the products of many other branches of agriculture, it nevertheless has an importance which should not be overlooked.

Few rural pursuits have made greater progress during the past half a century than has this one. Before that time the bees of this country were kept in box hives, and as a result the annual average crop of honey per colony was small. In addition to this handicap in not being able to manipulate the bees as was needed, bee-keepers generally lacked a knowledge of the methods of caring for them. With the invention of the moveable-frame hives by Langstroth in 1851 it became possible to care for bees properly and to manipulate in such a way as to get the best crop. As the use of this type of hive and of the honey extractor became general, bee-keepers become better educated in modern methods of manipulation, and the industry has advanced from a negligible quantity to its present important place in agriculture.

In the vast majority of cases, bee-keeping is not the principal occupation, but is carried on in conjunction with some other business.

According to the census of 1900 the average number of colonies to the farm in the United States was less than six, and valued at \$14.40—a very

small investment. Some States, however, averaged more, and some even less. And the number taken from the census can scarcely be accepted as correct. Then, too, bee-keeping is taken up by many as a recreation or a subject of nature study. Such persons do not wish to make it their sole or main occupation. Many farmers, also, keep a few colonies of bees and add to their income to some extent in that way. It is obvious that bee-keeping must continue to be an avocation in the majority of cases.

This brings up for consideration an important question which has been much discussed by those interested in bringing about an advance in the industry: Shall an attempt be made to increase the number of bee-keepers or to make better ones of a smaller number? Bee-keepers who follow the pursuit on a commercial scale are anxious that there be no increase in the number engaged in the business, but rather a decrease, with an accompanying advance in the proficiency of those so engaged.

This desire is not wholly selfish, for unless the increase is directly in the territory of the individual his crop is not affected.

If progress is to be made toward getting the largest possible honey crop from the United States, it will hardly be done by making bee-keepers who own an average of five colonies. It must be done by progressive bee-keepers financially interested to an extent sufficient to compel them to combat disease and to do their utmost to get the entire crop. We may not hope to attain this ultimate condition, but an effort might be made to discourage negligent and indifferent bee-keeping. In spite of the fact that bee-keeping is the sole occupation of but few, it, nevertheless, commands attention in that it adds considerably to the resources of the country and increases the income of thousands of people. The possibilities for its increase are great, and the advancement of this vocation is a worthy object as aiming to save for human use a resource which is now so generally wasted.

It is very difficult to estimate accurately the annual value of the products of the apiary, but from various sources of information it is reasonable to suppose that the value of the

honey produced annually in the United States is on the average about \$30,000,000, and that of wax, \$2,000,000, or more. Since the honey harvest depends so completely on various climatic conditions affecting the secretion of nectar, it is obvious that there is an enormous variation in the annual yield. As nearly as can be learned, the number of sections for comb honey manufactured annually by supply dealers is about 80,000,000, and that may be considered a fair estimate of the number of pounds of comb honey produced in the United States, since relatively few sections are exported. Extracted honey is produced more extensively, and it is safe to say that the annual crop is three or four times that of comb honey. Taking into consideration, also, the chunk honey and honey not marketed, but used in home consumption, the estimate is none too high.

In addition to the revenue derived from the bee in the production of honey and wax, we must not lose sight of the great value of the honey bee as a pollenizing agent, and in estimating the value of the industry in adding to the resources of the country this phase of the subject must be included. Other insects, of course, aid in this way, but the honey bee occupies a peculiar position in a consideration of this subject.

For this purpose there is no question but that the bee is of great service to the grower of fruits. No other insect appears in such vast numbers at this very important time in the spring when their agency is so much needed to fertilize the orchard and small fruits.

I should like to touch upon the different sources of loss, of which there are many, but the matter of disease, I trust, will receive the attention of this convention it deserves. There are now recognized two distinct brood diseases, which are contagious, and which annually cause enormous loss to those engaged in the industry. There is reason, too, to believe that these diseases are spreading to new localities at a rapid rate, and unless vigorous steps are taken there can be no doubt that in a few years they will be distributed to every part of the United States; and I cannot urge too strongly the necessity of stringent foul brood laws in every State and

Territory. The apathy of the bee-keepers, as a class, to these scourges is remarkable, in view of the fact that information is available which should point out the dangers now incurred by inadequate efforts toward the control of those pests, or in most cases by no effort at all. It is absolutely known that in a few counties in one of our States, a loss has already occurred, amounting to \$25,000, and there are many areas much larger where disease is equally epidemic, the loss may well be estimated at \$2,000,000 annually.

This and other subjects I might dwell upon indefinitely, but it is not my purpose to take the time of the convention.

There is one matter, however, that I feel we are all interested in, that I hope may be adjusted at this convention, namely, the present unsatisfactory method of electing the officers of the Association; and when I say unsatisfactory, I mean the officers upon whom the great honor is conferred, and the rank and file who place them in office; so little is known of the 700,000 bee-keepers of the United States and Canada, as to their fitness for these important positions, that there is too much of a repetition from year to year; and I feel, as do many others, that could some method of nomination or recommendation be made other than we have, without disfranchising any member entitled to a vote, it would be better; and in seeking advice from all available sources, I think something like the following might be an improvement upon the present method: For instance, if at the first day of this and succeeding conventions, a committee of good size representing the different sections of the United States and Canada, could be appointed, they to hold a meeting during the convention, when all appointed could be present, and they to report two membership names for each office to be filled at the next election. These names to be voted on by each member at the regular election, the member receiving the majority of votes cast being the choice of the entire membership. I am only offering this as a suggestion, but we are all at sea as it is, and it seems to me we would welcome a nominating committee, or something that will tend to give us some intelligent method of choosing the best men for the

place. I hope this matter will receive due consideration.

Thanking this Association for the great honor that has been conferred upon me, I am,

Very respectfully, your servant,

GEORGE E. HILTON.

The President—The next in order upon the program is "Shaking Energy into Bees," by George Williams of Indiana.

Mr. York—Before we take up the next subject it seems to me we ought to have the Committee appointed on Nominations. I think we ought to pay some attention to the suggestion of the President. This is really the first session of the Convention, and I would move that a Committee on Nominations be appointed, one member from each State represented here, that Committee to report before the close of the Convention.

Mr. Dadant—As a member of the Committee on Resolutions I have prepared a motion, but I thought perhaps it would be premature to bring it up right away; yet, if the matter is open and the Associations sees fit, while I have not yet met the other two members of the Committee, I will read it to you.

The President—I would be very glad to have any part of the paper I have just read taken up and discussed; I wrote it with that in mind, that it would bring out some discussion, and I was loathe to go to the next subject without something of that kind being done. I believe I have said things that are worthy of your attention and consideration; and I wish that the matter might be taken up and discussed. If there is any paragraph or point, or any part of a paragraph, that I have read that you feel should be brought up at this time, it will certainly be in order, and the chair will so recognize.

Mr. Dadant—Here is a resolution which I had prepared, and which I intended to submit to the other two members of the Committee:

"Whereas, The present method of nominating officers for the annual election of the National Bee-Keepers Association seems inadequate, be it

Resolved, That a Committee of as many members as there are States represented at the National Convention be elected to select and report the names of two candidates for each

office, in addition to the nominations obtained in the usual way."

If the other two members of the Committee are willing to present this as a report, we can hand it in.

The other two members stating that they were agreeable, Mr. Dadant said, As the Committee is unanimous on that, we present that as a partial report of the Committee on Resolutions and submit it to the Convention.

Mr. Kretchmer moved, seconded by Mr. York, that the resolution be adopted.

Mr. Darby—I just rise to ask a question. If I mistake not, the report said those members representing the different States would be elected. Am I right in that?

The President—I think the resolution reads "elected."

Mr. Darby—It seems to me we might save a little time by having the President appoint those members. It would take quite a little time to elect so many.

The President—I think the Committee was very kind to the chair in avoiding any feeling there might be that the President was taking too much upon his shoulders, but the Convention can move any amendment that they see fit.

Mr. Foster—I think it would save time to have it "appointment" instead of "election."

Mr. Poppleton—I move that the resolution be amended to read "appointed" instead of "elected."

Mr. Kretchmer—I accept the amendment.

The President—Then the resolution will read "appointed" instead of "elected."

Mr. Dadant—I would like to hear from Mr. France on that matter. Mr. France has more experience than any of us in regard to the manner of nominating candidates. He has often expressed himself on the shortcomings of the present method. We cannot change the present method because it is in the Constitution, but we can add to it through simply suggesting to our members in our report what names we prefer. It is only a tentative action on the part of the Convention, but Mr. France can show you, I think, the necessity for such a move.

Mr. France—Mr. President, I heartily endorse the move in which we are

starting. Those who are now in office are re-nominated year after year, and people ask me to fill out the blank for, they don't know who. That, of course, I would not do. It shows our system is sadly defective. This same idea was suggested by our Director from New York, Mr. G. M. Doolittle, and it has also come from the California Director, somewhat upon this same line of thought, and this puts it in a way that I certainly approve of.

The question was called for.

The President put the motion to adopt the resolution as amended, which, on a vote having been taken, was carried unanimously.

Mr. Bohrer—The resolution does not specify by whom these Committeemen are to be appointed.

The President—The gentleman did not say the chair, but it is taken for granted that he means the chair.

Mr. Darby—My suggestion was that the President make the appointment. I am not sure whether the gentleman who made the motion placed it in that manner or not.

Mr. York—There is only one that can appoint, and that would be the President.

Mr. France—As I want to present to the members who are not here a thorough understanding in regard to this matter, I wish to say there must be a time when a change will take place. Will we expect this Committee to make suggestions or bring in a nomination report that the members at the coming election can consider, or will it have to be held over for the next election? We already have received from thirty-four hundred and some odd nominations ballots sent out only 328 nominations. Now, if this Committee can suggest, it is my impression that the Committee's report will be the one the members will cater to.

Mr. York—There ought to be some way to amend the Constitution of this Association. When this Committee reports, if their report seems satisfactory to the Convention, it might be that they could recommend an amendment to the Constitution, which could be voted on in the next election which would be in November. I would move that this Committee on Nominations be instructed to make a recommendation looking towards the amendment of the Constitution on elections.

Mr. Goddard—I second that.

The President—I will read article 9 of the Constitution, "This Constitution may be amended by a majority vote of all the members voting providing such proposed amendment shall be approved by a majority vote of the members present at the last Annual Meeting of the Association, and copies of the the proposed amendment printed or written shall have been mailed to each member by the General Manager at least 45 days before the Annual Election."

I think we are in line to take the action that Mr. York has suggested, and it would be perfectly proper for us to do so at this time.

Mr. York's motion was put to the meeting and carried.

Mr. York—I would suggest this Committee be appointed by the President before we adjourn today so that they can make their report tomorrow.

The President—I will endeavor to take the matter up by States and make this appointment before we adjourn this afternoon. In doing that I will call the Vice-President to the chair, because it will take me some little time.

The Vice-President, Mr. York, in the chair.

The Vice-President—Is there anything else in the President's address we wish to discuss?

Mr. France—There are others valuable ideas advanced and one is upon the subject of bee diseases, and in making out the program, which is not yet printed, tomorrow forenoon will be devoted to bee diseases, and the President's suggestions will come in line at that time. I like somewhat of a system. Let us have the talk on bee diseases altogether tomorrow forenoon rather than to take up a part of his suggestions at this afternoon's meeting.

The Vice-President—If there is nothing else, the next topic on the program is "Shaking Energy Into Bees," by George Williams, of Redkey, Indiana.

At the request of Mr. France, Dr. Phillips, of Washington, read the paper as follows:

When the truth of a generally accepted orthodox proposition in politics, morality—or even bee culture—is questioned, a class of critics whom Samantha described as being "Sot in

their ways," hasten to try and prove the critic a fool, crank, or heretic, because he has the courage to intimate that the old ways were wrong, and a new one is right.

History is full of such instances, where the heretics were in the right, and their heresies eventually supplanted the old orthodox ideas.

Galileo was condemned and made to suffer because he chose to find fault with and differ from the previously accepted teachings in the Sciences. But he was right, and his critics were wrong.

Christ Himself was condemned and crucified because His teachings were new and different from the accepted beliefs of the Jews. That His teachings and theories were the truth, is now universally accepted, and His judges now appear as narrow-minded men, who allowed their prejudices to overrule the truth.

I use these instances, and could recall scores of similar ones, to illustrate the fact that all divergencies from the beaten track of orthodox belief are first met by opposition, but if they have the element of truth, they are eventually accepted.

These examples, which show us that we may be wrong when we fully believe ourselves to be right, give me the courage to advance an idea that until recently was new to most of you, and which I believe to contain much that is good for us to know and practice. It is not yet fully understood and analyzed, and I shall term it, for lack of a better name, "Shaking bees to induce honey-gathering energy." You may include under this term, if you please, every disturbance of the hive that causes the bees to fill themselves with honey and set up the "glad buzz" we hear when a swarm is entering a hive.

Now, most people are in the business for the revenue and incidental pleasure—therefore, they are Democrats or Republicans—I hardly know the difference nowadays. As for myself, I suppose I am a Prohi—not in the sense to prohibit the other fellow from getting his share of honey, but to prohibit the bees from loafing, and to keep them all at work all the flow.

When Brother Hutchinson and I exchanged views in this matter a year ago, he agreed with me that it was something entirely original as far as

he knew. But since the matter has been discussed, we find that numbers of close observers had noticed the energy of bees after any manipulation,

Lewis Scholl assures us that he has observed and utilized the increased energy of bees after any manipulation, notably, after moving them in a wagon for some distance.

C. P. Dadant testified at the Chicago convention to the same thing.

A. I. Root states that smoking will induce lazy bees to go into the sections some times.

An old Catholic Father once told me in confidence that he induced his bees to work in the caps (box hives) by drumming steadily on the hive for seven minutes, or long enough to repeat his aves, or creed, or something, every Friday at twelve o'clock. And I noticed that he always had more honey than his Protestant neighbors, who did not drum.

No less an authority than the late E. W. Alexander ('09 Gleanings, p. 196) knew of the energy-giving properties of shaking, and practiced it in his yards.

And later ('09 Gleanings, p. 225), J. E. Crane says: "There is no doubt that shaking at the right time and conditions has its advantages." He then intimates that we had better not be too free to shake, as the conditions are not always right. As well tell us not to cut any hay at all, as the conditions are not always right for curing it.

B. F. Cavanaugh ('09 Gleanings, p. 273) insists that it is "not the shaking, but the change or disarrangement of the hive excites the faculty of fixing things, and creates a necessity for extra effort * * * for a colony of bees when shaken is in dire necessity of a new home, combs to store honey, etc. For this reason, if not discouraged by shaking under wrong conditions, a gain in energy is resultant." Brother Cavanaugh, let me shake hands with you on your clear analysis of the matter.

And another, M. V. Facey, that staunch old Wolverine, ('09 Review, p. 171) in discussing the energy excited by the physical act of frequent extracting, says: "Under exactly similar conditions, one bee-keeper will receive fifty pounds per colony; another one, one hundred, and still another receive two hundred pounds."

(He then shows conclusively that the added yield was induced by the energy-giving process of frequent extracting. This is a valuable article, and all should read it.)

He adds in conclusion: "The impetus thus given can be readily noted in the increased vigor of their work; so much so that the apiary leisurely before is changed to vim and energy."

There is no doubt that Brother Facey has struck the right note, but as many extracted honey producers wish to leave their honey in the supers to ripen, and as comb honey producers of necessity must do so until capped, I would suggest that when the hives get full of honey, and the bees are inclined to be lazy, it would answer just as well to "shake the bees," and raise the super above an empty one.

Again, ('09 Review, p. 106), J. E. Hand, "Opening the hives and manipulating the frames accomplishes the desired object." (i. e., induces greater energy.)

"I am inclined to believe that this is the right theory, and that shaking is unnecessary. All that is necessary is to thoroughly frighten the bees and throw them in a panic, causing them to fill their sacs with honey, and, also, disarrange the combs, etc."

Right you are, Brother Hand, and here is my hand on it, that it is not always necessary to absolutely "shake" the bees off of the combs, but as the process of shaking is the manipulation par excellence that induces the conditions, both mentally and physically of a newly hived swarm, I chose to apply that term to my system. "Stirring up" might be a better term to use, but that is hardly sufficient in every case. For instance, you can not always safely introduce a queen by simply smoking, interchanging the frames, or any mild form of "stirring up." It is necessary to "shake," and do it thoroughly, after which you can safely allow the queen to run in with the bees with assurance that she will be accepted—a big thing, some times, in an outyard with limited time.

Or, again, in moving bees a short distance, the only absolutely sure way to keep all the bees on the new stand is to thoroughly shake them at night, when all are at home.

Hence, the term "shake" was chosen with the thought that it would cover

the whole ground. I could go on piling up whole stacks of testimony from the journals, private correspondence, and conversations that proper "stirring up" or "shaking," or manipulations of any description whatever, does "per se" induce working energy when conditions indicate it. But my time is limited, and I have given enough, I think, to establish my position.

The point I wish to emphasize is this: It is the physical effect of the manipulations themselves that revives the waning energy of the bees when they slack up work for any cause, and it is immaterial what the nature of the disturbance is, so that it is sufficient to excite the bees to the required degree.

All the big yields are produced by colonies and apiaries that are frequently "dug into" for some cause or other. New beginners and amateurs with new queens frequently outstrip their more experienced neighbors, and attribute the phenomenal success to the strain of bees or something that may not be the cause at all. Later, with the same strain of bees, when they have lost some degrees of the "fever," or have so many colonies that **they can not "fuss"** with them so much, they do not secure nearly such good results, and think, maybe, it may be on account of overstocking, or something else.

At one time I compared the methods and systems of a large number of successful bee-keepers—men who produced honey by the ton, and who, I believed, knew the reasons for their success. I can assure you that it made better reading than "Peck's Bad Boy" to compare and analyse these conflicting opinions and systems. This was when Doolittle advocated the Gallup frame and spreading brood in the spring. At that time he attributed big success to these two things to quite a considerable extent. (He knows better now.)

One advocated an 8 frame hive, another a 10, and still another a still larger even up to a 24. Heddon wanted his hives small so as to handle hives and not to be bothered with single frames. Dadant wanted a broad side as big as a country newspaper. Dr. Miller refused to paint his hives (although I do not remember of his claiming that unpainted hives were better for securing honey.) But he

did refuse to allow an Italian bee to come on his premises, even to get acquainted in a friendly way with his bees. On the other hand, A. I. Root claimed that his **Italians** had such long tongues that they could rob the bumble bees of their legitimate birth-right.

And so on down the list. It was you **could** do this and you **could not**. You **should** do that and you **should not**. But in spite of doing or not doing these men all made a success. They secured the honey.

I reasoned that these men—all successful—and each attributing his success to different and conflicting things, could not all be right in their conclusions, for if so how could the one fellow who did the one thing the other claimed to be fatal, succeed if the other was right?

Therefore, all the apparent conflicting ways were right or rather harmless, and success did not depend on either pet theory, but on something entirely different.

Then I began a process of elimination of the conflicting theories and processes and found that the common factors of success were very few indeed. They could be counted on the fingers of one hand. All agreed in the following joints: Given a fairly intelligent bee-keeper, it requires:

1st. Colonies strong in bees of almost any old strain at the beginning of the flow.

2d. Movable frame hives of some pattern or other that admits of tiering up.

3d. A vigorous and prolific queen at all times.

4th. A good location.

5th. And last but not least, all practiced manipulations for various purposes frequently.

Now by comparing these results with another list which I made of **unsuccessful** bee-keepers, I found that even though the first four common factors were present, almost invariably **no manipulations of any description were practiced**, and in all cases the degree of success could almost be measured by the **number of manipulations performed**, and it seemed to make but little difference what these manipulations were, either. But I eliminated again and found that where success in any degree was achieved, two common factors were

present in all cases—smoking and handling frames for various purposes. Hence the logical conclusion was that if we are given the first four factors, and supply the last two in a proper manner, we would achieve success. I experimented quite extensively by extracting every ten days and comparing results with colonies let alone. I made quite complete notes and records of these, but they were destroyed by fire that also destroyed nearly all my apiary and fixtures. Recently I have gone back to my old love and have demonstrated to my own satisfaction that judicious “shaking” gives me the “added pound,” which means a profit. I tried it on a small scale last year and it gave me quite a nice margin over my other yards where I did not use it so freely. I planned to use it in all my yards this year, and in fact did in a small way; but as Adrian Getaz says in the Review: It was a complete failure. The bees I shook did not net me more than five pounds per colony, and that badly colored with honey dew, but as none of the others not shaken did any better, I eliminated again and found the common factor of failure to be in the drought last fall which killed the clover, so we must not blame the shaking for the failure or for the honey dew either, as one critic tries to do.

Do not make the mistake of thinking that shaking your bees will cause them to gather honey when none is secreted by the flowers, as it surely will not. Neither is it very valuable the first few days of a flow, unless you wish to introduce a queen, move your bees or they will not enter the sections, but when the first spasm of work is over and the hive is pretty well filled with brood and honey, and they begin to be dilatory, then is when the shaking will count big, and the heavier and longer the flow the more value it is to you. If you are a bee-keeper worthy of the name, you will not put in overtime stimulating the little fellows to their best effort, and gain dollars by it, too. Do not imagine that shaking where the bees run back on the old combs will discourage swarming, for it will not. It stimulates brood rearing and thereby tends to promote swarming or increase. But as Kipling has it, “Swarming is another tale.”

I find I can increase largely of a good season and not sacrifice any honey whatever, rather increase it if anything, by judicious shaking. This is quite a big item for me, as I am enlarging my yards and increasing their number.

The value of shaking lies in its simplicity. A novice can readily master the few manipulations required, and a bee-master can thus multiply himself indefinitely. While there are other and different ways of doing many of the things that bring success, shaking has proven to me to be the **best** way of doing most of them. But, after all, success depends largely on a good flow and the judgment of the bee-master and the watchful care and faithfulness of his assistants.

The Vice President—You have heard the paper as read by Dr. Phillips on “Shaking Energy into Bees.” Now, it is open for discussion. How many have had any experience with this question? (Nine members raised their hands.)

Mr. Brown—My experience has been that it was not merely the fact of juggling up the bees that could really be called shaking, at the same time I think that helped; but the plan we worked was—I didn't think of it as shaking up the bees at the time—we used to go over the yards about every two weeks and commence at one corner of the yard, and go over the full number of colonies that were in that yard, and spread the brood to a certain extent in the spring, or remove a few frames that were filled with honey, using that brood to build up some other colony. As we would go over them we would get things ready for the honey flow, and just before it started we would put on our uppers. After the uppers had been on a certain length of time we went through and took out a few frames of brood for the purpose of building up new colonies for helping some of the weak ones along, and holding some of the others back from swarming. If they began to get clogged up with honey we would go through the yard and take out from every hive from one to four frames of nearly capped honey in the centre of the hive. There was one yard that was pretty large, and we could not get over it very well. It took us a day to go there and a day to come back, and we would run

down there, and frequently we would have rain, and there would be one corner of that yard we would not get over, and we noticed that it was worse for swarming, and at the same time the bees did not go to work; there would be more bees lying out in that corner of the yard than anywhere else, and less honey, although they had room enough in the uppers. We had to change our system and make a plan, and keep a record of what we had gone over, and commence at that point in the yard the next time we went over it, and go as far as we could the next trip; and while it was not entirely the shaking that caused the increase, it had the effect, as the paper stated, of causing them to build up, and causing them to spread and keep the brood nest in good shape for the brood, and that kept the colony active. A new swarm would always go to work with more energy than an old one. This manipulation of the frames I think brings about the same advantage that swarming does.

Mr. Poppleton—I dissent from the paper on three or four points, and especially the one that extracting excites the bees to greater activity and causes a greater yield. I tested that matter very thoroughly in Cuba. Some of those things we can test much better there than in the United States. I find for two or three days after extracting that those bees will gather less honey than the other bees, or than that same colony without extracting. When I came back to Florida I kept a hive on the scale, and kept a thorough record for two or three years, and my experience is that for two or three days after extracting, the bees gather less honey than before. The extracting seems to discourage, instead of encourage. I extract part of my hives once in two weeks, and I have come to the conclusion—I have watched it very closely—that so long as the bees have plenty of room in the hive, with not too large a hive, they will gather just as much honey whether you extract or do not. You can go on and allow a large part of the colony to become sealed; so long as they have got room to store honey, they will store just as much as if you take out part of it. I have watched this point very closely.

Mr. Bernsheim—Mr. Vice-President, it seems to me that frequent extract-

ing is very much against us in regard to getting ripe honey; I know it would be with me. I can't extract every ten days and get my honey as ripe as I would like it, and as ripe as we read about in our journals; therefore, I am against frequent extracting.

Mr. Dibble—Isn't it a fact, from Mr. Poppleton's statement there, that in extracting, if he placed the comb in the hives, that for those two or three days he is speaking about, the bees are preparing the comb, and, therefore, he would get less honey than he would if he had not extracted? Because we all know when we put combs back in the hive there is certainly a lot of work that has got to be done by the bees before they will go to work gathering honey; they will all go to work and clean those combs up.

Mr. Poppleton—I would suggest that the bees do that work in a couple of hours.

Mr. Kretchmer—Mr. Vice-President, although I voted on the question, yet my deductions are not according to the version that has been given of the question at issue. My deductions have been something like this: We all have noticed that a new swarm of bees works with more energy after swarming than any other time. I endeavor to prevent swarming by chipping out the queen cells. I have shaken the bees from the comb. In fact, I make a natural swarm in an artificial way, hiving them back into the hive, and the bees have acted similarly to a natural swarm just hived, working with energy. My inference is, it was not the shaking that brought the energy, it was simply by producing an effect similar to a natural swarm that gave me the result. We may have our own deductions in the matter, but my idea is, it was not the shaking at any time, but simply by producing something similar to natural swarming, and hiving them the same as a natural swarm.

Mr. Dadant—I see my name is mentioned twice in the paper, and I desire to explain what my views are on the subject. I don't want you to think that that is exactly it, but I just want to explain how I understand the matter. Now, I have not seen anything at all in the way of improvement while the bees were making honey. The improvement I have seen is in the way the bees were handled

before the crop. We have transported bees from one place to another, and we have had those bees do better than the others, although the location was not any better. We have handled bees a great many times before the crop, and we have had those colonies more populous, and, therefore, more active. Here is my explanation of the matter: When you open a hive of bees and smoke it, you frighten the bees. In order to tame bees, you have to smoke them so that they will fill themselves with honey. When they do that, they go about the hive for a while before they return. If you do that many times, you have many bees filled with honey. We all know that the queen is fed by the bees without having to hunt for her food herself. When they want her to breed, they feed her often. Therefore, when you open your hive you have disturbed the bees, and you have caused them to fill themselves with honey, and before they put it back in the hive a number of them have passed the queen and offered her honey, and she has eaten while the crop is not on yet. They fill themselves out of their old honey. The queen will lay more for that time; it will only last a day or two; but if you continue it, it will last longer. Now, an increased energy on the part of the bees, I think, would take place when they were changed in location. You know that your bees are acquainted with your location, and it probably takes them several days to become acquainted with the entire surroundings. They go a mile and a half or two miles, but they do not get settled in one day; it takes many days. Those bees, when you have moved them, have to learn the location. Put yourself in the place of those bees. It certainly must make them restless. As they get acquainted with the locality they will hunt more and find more honey. There is an increased energy which has been caused by the new location. When it comes to extracting I do not believe that extracting often makes a difference, only that you get more honey, but it is thinner.

Dr. Bohrer—In the matter of shaking bees I never practiced it except in this way. After having had foul brood come into my apiary two years ago, in reinforcing I put some powerful colonies out on some fourteen

frame hives; they were not only strong in stores and combs, but also had a prolific queen. I would take a comb out of that strong colony and give it to one of the weak ones. I would put a sheet of foundation in and they would build it out, and in one 14 frame hive I did that more than fourteen times. When I found a colony was busy, and I found a number of combs or frames nearly coated over I brushed the bees off, moved that and put it into a super of the same size—I used nothing much but standard Langstroth supers—and put it over another colony, because the bees can take better care of the honey than I can until I am ready to extract! and I find by taking the comb away from the colony when they have the hive almost filled to its utmost capacity, a number of frames finished up and nearly sealed over, by taking out two or three of those frames and giving them foundation or empty comb, it seems to increase their energy. As to taking bees that have lain out a number of times, I never allow that; I wouldn't have it. I would like to know of anyone having a colony or hive not full of honey, where the bees hung out and wouldn't work in it, especially if there was a honey flow? I don't think you will find that to be the case. When the hive is full and they determine not to swarm they probably will lay out and do nothing.

Mr. McClintock—Just a thought while we are passing in regard to the hauling of bees. I have practiced to some extent migratory bee-keeping. I do not count that moving a colony of bees necessarily puts them in a better condition internally in regard to the hive. This season I had an apiary about fifteen miles away, and I moved the colonies from my own home apiary some fifteen miles to a basswood section, and I moved some of the colonies from that outside apiary back to my own home yard, and the colonies in my own home apiary that were poor in the spring, this fall can show up more pounds of honey than any colonies we moved from this apiary fifteen miles away to my own yard. The colonies I had moved home were, some of them, in good spring condition, and some which were in an awful condition at home can show up more pounds of honey today. It seemed to me after I had

moved a colony of bees fifteen miles and given them a good shaking up that we noticed they were depleted in numbers; it seems to me the colony is not as populous as it ought to be. I have often thought that worrying in there they have shortened their lives; that it was not really beneficial to the colonies. I would like to have some statements from others who have had more experience.

Mr. Morgan—For the last 35 years I have moved bees more or less, especially in Wisconsin. I make a practice of moving bees every season to the out yard, and, to make a long story short, I believe the moving of the bees is a good thing for the increase of honey and the helping of energizing them for the work that has been referred to. I found no unfavorable symptoms coming from that, and if that would be considered a shaking of the bees, I would agree with the paper that has been read in regard to shaking. Moving bees, other things being equal, I think is a benefit.

Mr. Anderson—Last year I looked around and I saw one stand with very few bees in it, and they were coming out from one side. I looked at them a while and I thought, what can be the matter? I made up my mind I would see by experiment. I opened the top and took out the frames. I wasn't afraid of destroying them because they were pretty well destroyed before—and afterwards I found that colony did better than any of the others and gave more honey.

Mr. Barber—Last June I moved two apiaries of bees. One apiary, while it did not have the same location, had the same treatment. One apiary I fixed up and put on the upper stories myself. I am getting old, and I said, I will do this just as easy as I can. I hardly had a smoker or anything of that kind. The next apiary I did not put on the upper stories, but I went down and got 70 or 75 in the shed, and I said to my man, I am in a fix, can't you put those other stories on for me? He said, Yes, I can. He went down, and he was quite a little bit afraid of them, and I said to him, You get down into the bottom and get out a frame or two and put them up above. He went down and took out some frames and put them up. The consequence was that when I

went to this hive that I had been so careful about I couldn't find any honey. I said, that set of colonies hasn't got enough honey to winter them. In the other apiary there were a good many of the colonies which had sixty pounds. I have another apiary, and after I had hired a couple of men to put those upper stories on, there were forty-six swarms there, and they got off fifteen sixty pound cans of honey from them, and there was quite a good deal of it was not capped over. Those two apiaries that got the most smoking gave the most honey.

Mr. Clark—Mr. Vice-President, I probably have not had as large an experience as some of the gentlemen who have spoken on the subject, but I have had a little practice, and there is one thing I found out in shaking bees after I had done it the second season, I found that it wasn't necessary. The trouble with bees I think is something different from shaking. I have found out that if you shake some bees they are of no use. My firm belief is that if a man has the right strain of bees and gives them enough room, they do not need any shaking. If they are anything like the bees that are in my yard, he has got to be very careful. I live four miles from LeMars, and I drive out every night and morning. On the 28th of last June coming home one evening I saw a very large swarm hanging on a willow hedge. I stopped and took the swarm with me and hived it into an eight frame hive on drawn combs. That was about seven days before the white clover honey flow opened up. I put those bees into the apiary along with the rest of my bees, and during all the honey flows there were—we had several short honey flows—those bees would never go to work in the super; and furthermore, they never got enough honey in the lower part to winter on. On the last day of July I went in there and examined these hives, and they were quite full of bees—a nice lot of bees there. I examined the queen, and I pinched the queen's head off. After that, in about 42 days, they had filled two supers of honey. If there is anything in the strain of bees, or if there is more in the shaking, I would like to hear some other gentlemen get up here and tell me it is the shaking that does it, because I am not convinced of that. The only

thing I have ever found that puts energy into bees is transferring entirely, that is, taking them from one hive or one location off their comb and putting them in an entirely new location on new comb, or make them build their own. If you watch them and manipulate them properly you will get the results.

Mr. Huffman—I have been listening quite a bit to this shaking business. I will admit you can shake bees, but I don't believe you can shake any energy into them, but they can shake it into you. I am with Brother Dadant on this. Keep your colony right and have the right kind of bees, good strong bees, and you will get more honey than from any other kind. It depends on the bees more than anything else. I have shaken several; I have shaken them on empty combs and put the brood on top, but I couldn't see there was any more energy in them than any others. If you shake them and move them it may help some, but if they go into a new field they have got to work to find something new, and they get out, when the honey season comes on they are ready to go to work at it. If you manipulate your swarms and manipulate them at the right time, and get ready for the honey flow when it comes, and give them plenty of room, I don't believe they will need any shaking; and when they are fit to extract, put on your combs.

Dr. Jones—I think that those gentlemen who have spoken last have hit the nail on the head. It is not the shaking, but it is giving them plenty of room at all times, and they will get the honey if there is any. As to getting honey in the top stories, I think one bee-keeper said by raising up a comb or two with honey or brood in it from below and putting it above that, will start your bees to work every time. I have noticed that at different times, in different seasons. Mr. Facey claims that dividing bees will put more energy into them than anything else you can do. We haven't any trouble up in our country getting the bees to work, but when they get crowded, they are not going to do anything. When bees loaf, it is because they haven't room to work. If you give them plenty of room, and keep ahead of them, they are going to work all the time. Mr. Ramer is acquainted

with our system of managing bees up there.

Mr. Huffman—I wish they would devise some means this year to put the energy into the bees in our locality. We have the bees, but we don't have the honey.

Mr. Snyder—The last two gentlemen's experience coincides with mine. It is my experience that to give plenty of room when the bees need it is what gets the honey. Last year I undertook to experiment with dividing my bees and establishing an out-apiary, thinking my home apiary was a little overstocked, or was in danger of being so, and the results were not satisfactory to me. The bees I had moved were hauled some four miles to a location that seemed to be unusually good for gathering honey; it was a splendid location for clover, etc.; and, in hauling these bees, if shaking was any advantage to them, I think they undoubtedly had it, as I had to go down two very stony hills on the way; and they got some smoking when we arrived at the place, in taking them off to quiet them for handling; and I am positive had I kept those bees all at home, in the home apiary, I would have had much more honey, as my heaviest yields were from the colonies at home that were given plenty of room.

Mr. Bernscheim—My experience is not shaking bees for the purpose of putting energy into them, but watching them closely that they do not hang out. Whenever I see a cluster of bees as big as my hand hanging out, I examine the upper story, and quite likely I add another story between. This last summer I took 37 swarms on shares. The man that owned them went out West on account of his health. The lady that was left at home wanted me to take care of them in her own yard. I said I couldn't do that, because, I said, when your bees need your attention, my bees need my attention at home. So I took them to my own place. When I got to harvesting the honey she apparently thought she got more honey by getting half the honey from me than she did when her husband ran them at home. I don't average more than one swarm out of three colonies per year, so it shows I keep them doing something else than swarming.

At this point the President resumed

the chair, and said: I will make my report at this time. We find that we have but eleven States represented, and two or three of those with only one or two present. I am sorry to say my State stands in the one column. Alphabetically arranged, we have made the following selections:

D. C.—E. F. Phillips, Washington, D. C.

Florida—O. O. Poppleton, Stuart, Fla.

Iowa—W. P. Southworth, Salix, Iowa.

Illinois—George W. York, Chicago, Ill.

Kansas—Dr. G. Bohrer, Lyons, Kans.

Michigan—George Hilton, Fremont, Mich.

Minnesota—P. B. Ramer, Harmony, Minn.

Missouri—M. E. Darby, Springfield, Mo.

Nebraska—J. P. Goodwin, Homer, Nebr.

South Dakota—R. A. Morgan, Vermillion, S. Dak.

Wisconsin—Jacob Huffman, Monroe, Wis.

The President—The next subject on the program is "Putting in Comb Foundation," by Mr. W. P. Southworth, of Salix, Iowa.

Mr. Southworth — Mr. President, Ladies and Gentlemen: You no doubt expected to hear Mr. Brown on this subject. Neither of us knew that there was a program. Mr. Brown is the wax presser, he is the man that boils up the old combs and gets the wax out, and is probably more conversant with that part of it than I am; not that I am more conversant with foundation and wiring of frames than he is.

As to this matter of foundation, I am, no doubt, talking to men that have had a great deal more experience than I have had, and I feel some of them ought to have taken this place instead of me, but, nevertheless, I am indebted to the men that have made a success of their business and have been willing to give these points on which they have made a success to the public, and if I can give anything that will be of any benefit to this meeting, I want to do it. I am of the opinion we need more honey-producers, and that there is not enough honey produced at the present time to supply the needs of the public.

Every enterprise must have its

foundation; the same thing applies to the bee-hive, and I go a great deal on foundation in the brood nest and in all parts. I don't want to speak from the standpoint of a supply dealer to urge people to use foundation, to get them to buy it, but from the standpoint of a honey-producer. The thing we want is the honey, and we have got to have the combs to put it in. We have also got to have the brood nest to raise the bees to gather this honey. We do not want crooked combs, we do not want odd shaped cells, nor do we want a great amount of drone comb. Foundation gives us the best results in securing this. We want the combs filled with brood from end to end; from top to bottom, and from corner to corner, and I am quite sure that all through we will get the best results with using the full sheets of foundation.

Not long ago it was my privilege to look over a lot of combs in which the man had only used starters. I might say he has the finest lot of combs I ever examined, but he had to put lots of work on these combs, after they were drawn, to get them in that condition, by cutting out such parts as he didn't want and piecing in the others.

In the matter of getting our foundation drawn into good combs, we want to put them on in season and not out season. It is useless to put foundation into the frames in the hives if the bees are not in a condition to utilize that foundation, to build it out and use it. The bees must be gathering nectar or else have a sufficient amount of food to stimulate the secretion of wax to draw out and get nice straight combs. If we put it in at a time when the bees cannot use it, it will sag with the weight of it. I would put the foundation in in the spring when the flow commences and would prefer to have it drawn in the brood nest or in natural swarms. In arranging the foundation in combs, I think it is well to use wire or splints. In the matter of using splints, I cannot speak from experience, as I have never used them nor come in contact with persons who have used them, but I have used different methods of wiring; longitudinal wires were very good, but I found it would sag; we could not keep the foundation up in all cases so that it would not spread. Then I used

the longitudinal wires with a diagonal wire, and still did not reach the results, and I don't know that any wiring is absolutely perfect under all conditions. A little method we have is to put in two longitudinal wires, and then one up and down, and fasten it home, or take a wrap around the second wire.

This particular frame I have in my hand was one from which the comb had been boiled; I think it was treated for foul brood, and I found the wires were in suitable condition to fill again without using new wire. But, I have one here with a longitudinal and diagonal wire, and it was treated the same, and it is all loose. This method of wiring is quite quickly put in. We have a frame in which we lay the frames to drive our nails; then bend the wire to a hook with a pair of round nosed pliers, and then the loop in one end of the wire is drawn around, and we prefer using a nail and hook at the other end, because we allow for the emergency of boiling out, if it is necessary, and re-wiring and putting them in. This method is not altogether original with me; I am indebted to Mr. Chantry or some of the men in his employ that were handling over a lot of old comb and found the diagonal wiring loose, and they hit on the method of tightening up by putting in vertical wire, and found it was a good method, and I have been using it since, and I know of others that have used it in like manner. In putting in the foundation after the frames are wired I prefer good hanging frames to the self-spacing frames. In those common home-made frames we fasten our foundation with hot wax. We hang the wax over a lamp to keep it warm, lay the frame in place on a board, and with a spoon or some other plan run the wax along the edge and fasten it to the frame. We fasten the wire either with a wire imbedder or rocker. In the extracting super, I think it is well to use the foundation all through. It is as profitable there as it is in the other part. In the matter of the section super, we do not want any defective use of foundation there. I have sold a great many hives to people to catch a stray swarm with, and they want something cheap. I have shown them the sections with the starter in, and with nearly full sheets, and they say, "No, I don't want

to put so much money in it; sell me a set of section without anything in." That man would go out and put them on, and I would hear that it was an entire failure. I am sure, in starting bee-keeping, we want to start with right foundation, and put in enough sections to guide the bees in line.

The question of putting in full sheets of foundation and fastening them on all four sides of the section has been brought up. From the standpoint of a honey dealer wanting to ship, probably this is good. The honey well fastened and attached to the sides of the section will, no doubt, stand the handling and bumping around of shipping, but is it the best thing for the table? Can we use little enough wax in fastening that foundation so that the consumer is not going to have to eat it? I rather doubt it. But, I do believe if we will use nearly full sheets of foundation and fasten the top and bottom starter, and then have a good honey-flow, or make the conditions the same as a good honey-flow by feeding our bees when they are working in the section supers, and keep the bees working, we will have just as good results as though we fastened the foundation on all four sides of the section.

I want to hear from others in regard to it. If there are any points I have missed, I want you to supply the deficiency, and if there are points where I am wrong, I want to hear from you. I am in the business to get honey from the bees, to get a good equipment for handling, and I want to help and encourage others who are starting in the business by working along the same line. I thank you for your attention.

The President—The matter of the use of foundation is certainly an important one in our industry, and I trust the matter will be discussed thoroughly and intelligently, and that we may learn something. Is there anyone who has anything to say upon this subject at this time?

Mr. France—Mr. President, there are one or two points, in briefing this, that possibly Mr. Southworth overlooked. After seeing this method demonstrated, towards spring, I wired sufficient for 25 hives on this plan, for the purpose of comparing it with the other. Where these staples come, if your foundation comes close to it,

I find it is advisable to put a little wax in, with a brush or something, upon that staple, otherwise the bees will cut away the foundation from that point, leaving a deficiency in the comb. Also, where the crossing comes, those spots I also attach by the brush, with a little melted wax. It has this advantage over the other system, where these wires become slackened, our comb foundation has a tendency to sag. This way, with those wires tied in the center, it gives it the strongest tension right where you want the weight. That part of it is a grand, good feature.

Again, the staple method of wiring prevents the tendency of a loose tension, from the fact that, while you wire through the wood, the wire soon cuts into the wood, and gives you a slack wire. In this way, there is no chance to do that. I tried this method on 25 hives, and I will own that for me, taking the length of time to put in the nail, bend the staple, and put in the wires, that I couldn't make fifteen minutes difference in time on the 25 hives. It takes less time after those are put in to finish the wiring than in the other way.

Dr. Bohrer—Do you deem two wires sufficient?

Mr. France—I believe they are.

Mr. Miles—It was up to the convention here two years ago, and I wired 25 hives that way, and I had the foundation sag, and I got the poorest combs that way I ever got. They sagged with me right between the two wires. With the few I used as upper stories I got fair results, but I used most of them for brood-chambers. Last year I went back to wiring on three wires and putting in staples. I found a great deal less sagging than with this system.

Mr. Kretchmer—There was one remark which I desire to reply to. Mr. Southworth made the remark that he objected to the Hoffman frames because he couldn't extract from them. I think that is not the fault of the frame but the fault of the construction of the extractor. If the screen is made so that it will exactly fit between the two projections so as to allow the frame to lie perfectly smooth, there will be no breaking, and consequently the fault is not with the Hoffman frame, but with the extractor.

Mr. Brown—We used that system and the foundation sagged, so that it was practically useless for that purpose. Mr. France spoke of the time required in wiring. I have had several frames wired through the woodwork, with three cross wires and two corner-ways, and I have not been able to get from a man any more than from 200 to 250 of those frames in a day's time. After Mr. Morgan had put in the nails I wired 135 in an hour's time. The only principle is to take your bunch of frames, have a place for nailing, drive the nails as fast as you can, and then start in and bend your staples, and do your wiring afterwards. Where the five wires have been put in I have got the best possible combs out of them, but it takes too much time for that, and too much time in fastening the foundation. If you are going to draw combs you must have a good honey flow.

As far as using the Hoffman frame for extracting, it is not merely the fact of the frame not working right in the extractor, but it does not work right at any time all the way through for a good many men; and I have noticed a great many of the larger bee-keepers use a non-spacing frame.

Mr. Morgan—In regard to the wiring of the frame, I want to say that I use two wires only, like the one shown by Mr. Southworth. This year I used 500 of those frames, and I don't think there was a single frame which sagged or broke down in the 500. I had a young man wiring the frames for me, and he would wire three a minute and put in the nails. We used the frames not only with full swarms, but in the upper and lower stories, and with good success in every case. I use two different makes of foundation so that I know whether an ordinary foundation will work nicely in that class of frame with that wiring. I am not so prejudiced against the Hoffman frame as some, although I believe it has no particular advantage over the ordinary frame.

Dr. Jones—I would like to hear Mr. Poppleton explain a scheme which he has, which I think beats them all as far as sagging is concerned.

Mr. Poppleton—Some six or eight years ago a gentleman in California sent me a permit to use his patent, and it is the finest I have ever used, but on account of it being patented

I have never given it out very much. Mr. Hill, the late Editor of the American Bee-Keeper in Florida, and myself tried to retain the patent for the purpose of giving it to the bee-keeping world, but we could not succeed, and we dropped the thing. We use it ourselves; it beats wiring. I have not used wire for years and years. It is a very simple thing indeed. I have got now in use something very similar to the old Given press. I had one in the apiary when I went to Cuba, and in using that I would make a double dip of the top of each sheet, that is, dip sideways instead of endways, and by doing it that way and pressing it, I got sheets that would not stretch, having the upper half very heavy and the lower half very thin. I tried to interest the Root's but they said there was some mechanical difficulty in running foundation by that method. Then I tried a few years ago to interest them again, but they were then working on another scheme, and didn't take it up. This process is simply forcing the wax to any part of the section that you want it by brushing melted wax over the surface. It also adds wax to the edges of the cells and in some way or other strengthens them. I think that also solves the question of feeding wax to the bees for them to use. I take my comb, and I have a little dish over a little kerosene stove so as to keep the wax melted, and I use an ordinary three inch flat varnish brush. I take up all the wax I can and just rub it over the upper half until that wax will press out over the edges of the cells. It adds wax to the cells in the upper part and I have no trouble. I use 1-4 inch deep foundation. I have the finest combs I have ever had in my life. It solves the entire problem of stretching combs. The gentleman who has patented this process lives in South California, and his name is Henry Vogan. It was patented in 1900. I would no more think of going back to wires or doing without it than I would of trying to keep bees that would not rob.

Dr. Jones—This is a patent process, and I read in the American Bee-Keeper how to do it. I didn't know who the man was or where he lived, but I will take that frame and show you how I did it. I have got one of the finest frames you can find. I have a

paint brush about half an inch wide, and I dip that in hot wax. I wire my frames the same as this is wired, because we use them for extracting purposes in the upper story. I was afraid of them breaking, otherwise. Last year I tried it, and I just took the brush and daubed a little wax where these wires are. Here is where they break loose very often. We don't need much wax. I worked it that way last year, and had very nice frames. Heretofore I have always had trouble with them bending, especially if it is hot weather. I could never get them to suit me. I have my wax almost boiling, so that it will smear well. With a brush, using it lightly and quickly, you can get the wax on there after a little practice, so that it reinforces it. My experience is, it will blend right between these wires, but this stiffens it up so that you can put it in the brood nest or in the extracting chamber, and the bees will build it out. I had it in twenty supers, and there was not a comb but what was just as straight as a board, and I never had that before. I tried it on a small scale last year on two or three hives. I got a number of extracting frames, and I put in a couple of sheets of this, and the bees drew it out just as nice as anything. You take those and put them up above, and you have got a lot of new combs that way, and you have got them straight. I read that article, and I saw Mr. Poppleton had a right to use that process, and I thought I had a right, too, and I thought if they ever caught me, that I would pay for it.

Dr. Bohrer—In the matter of wiring, I see there are a great many different methods. This thing of the wire sagging and becoming slack, is one of the great difficulties to overcome. I am very much interested in what the Doctor and Mr. Poppleton have said in regard to waxing the comb foundation; I believe it will avoid this buckling of it. No matter how systematic we try to be, we cannot always put the foundation into the frames and give it to the bees just exactly the way they want it. We have got to anticipate in a good many instances, and for that reason I believe that this is going to be quite an improvement upon past methods of putting foundation in frames, and that it will save that buckling. But, in addition to that, I would

not wire frames entirely by this method. It seems to me there is hardly enough wire. My own method has been to drive a $\frac{3}{4}$ -inch nail through, and with a pair of pliers make a hook on it, and, also, one on the bottom bar, running the wires in this way, and it thus makes practically three wires, two of them crossing and one running transverse. I have never tried this method spoken of, but I think it would be an easy method to run another wire, and it might be an improvement, I don't know; I simply suggest it. That matter of waxing the foundation, I believe, is a valuable suggestion for reinforcing the foundation.

Mr. Huffman—I would like to ask one question about this additional waxing, how much does it add to the weight of the foundation? We hear a great many complaining about foundation being too heavy, and it costs too much. With all this extra wax you put on there it still adds, and it will make you more foundation. Which is the most advisable?

Mr. Poppleton—I use what is called medium foundation, as made by Mr. Dadant. This year I have used it from other makers. The amount of wax used is very light, but I think the more you can use the better, because it is a matter of feeding wax back to the bees that is only worth 30 cents a pound, instead of having to pay 45 or 50 cents a pound for foundation.

Mr. Dadant—I aim to avoid speaking of foundation, and you can understand the reason. In this case, I think I can enlighten you as to the probable advantage of it. This method is news to me, but I am struck with the advisability of it. The Given Press would have been just the thing to make sheets, if it had been practicable. That is to say, the sheets made on it, because they are tougher; they are cast wax; they are in regard to wax what cast-iron is in regard to iron. The moulded sheets made on the mills are annealed, and they are exactly right; with wrought iron they will stretch, they will bend, but they will not break. The sheets that were made on the Given Press were deficient in several respects, and they were generally too heavy. When they were light they were so brittle that if you took the edges of a sheet it remained in your fingers and the rest of the sheet remained on the table. You

could not ship the Given foundation with any satisfaction. With the foundation made in the mills you have an article that bends. The experience of the past is that bee-keepers want lighter and lighter foundation all the time. At one time we made foundation 4 1-2 and 5 sheets to the pound; we make it now 7 to 8 sheets, and they want it fully that light. When you take that medium foundation and you put on cast wax, you put on liquid wax, which becomes a cast article right away, and it does not take much of that to stiffen it. In other words, you are putting cast-iron on your wrought iron. The thing struck me right away as soon as it was mentioned that it must be a good thing, and you can use a lighter article of foundation than you could otherwise. A great many of the Europeans make their sheets almost altogether by the cast process, but they are not hard to please. I read an article in which a man said he was making a very light article, 3 1-2 sheets to the pound. It is impossible with a cast to make a good article that is satisfactory in America.

Mr. Southworth—I want to say right here I believe I have got a point out of this matter that is worth to me all the energy I put in to come to the National at Sioux City. I have had trouble with that method of wiring with the sheet sagging at the end. Now I have this principle of the wax, dipping down each end, which will hold those edges of the foundation. I believe we have got a good system of wiring to hold the foundation.

Mr. Hall—I didn't intend to say anything on this subject. It seems almost everyone who gets up gets a piece of my story. Speaking about this reinforcing with the paint brush, I never heard about this before in public. I didn't think of it, but I can show you probably 25 or 30 combs that my bees have never worked upon which have been strengthened in this very way. It seems I have tumbled on to something which somebody else has got away ahead of me on and patented. I propose to go on and use this if I find it is doing the work Mr. Poppleton and others have said.

There is one point about foundation I want to speak about, and that is putting foundation in sections. I believe

I have had about as much experience in putting foundations in sections as perhaps any other party in the room of my age, or of my time of bee-keeping, perhaps about fourteen years. I have in the back room here a foundation machine that was built by the Lewis Company that I have gone to work and fixed over into a bottom starter foundation machine, and before you leave the hall entirely I want you to examine it. There is no patent on it. The Lewis Company have promised me to put the process on the market. Their buildings were burned down this summer, and they have not gotten around to it, but probably they will get the machine on to the market in time. They told me to send the machine to them two years ago and to let them examine it, and shortly after that the elderly gentleman died. The young Mr. Lewis at that time was in Florida, and he came home shortly after this and took the matter up with me, and they have agreed to put the machine on the market in the manner in which I have got it arranged in the back room. Anybody can easily fix a machine as I have fixed it for a bottom starter machine in a very few minutes, and by examining it you can see how it is done. It will cost you nothing. I was the originator of it, and consequently there will be no patent on it.

Mr. Poppleton—I hope no one will credit me with advising the use of the Given Press foundation. I should condemn it entirely for all use except it taught me that one lesson, the use of the upper half. The instant I saw this description by this man from California I saw it solved the very thing I had been working at for fifteen years. Another thing, the wax put on there being cast is a little softer and I think the bees will work it out a great deal more quickly than after it is pressed hard. That is simply theory.

Mr. Manz—I would like to ask Mr. Poppleton if he does anything to keep the wire in the centre of the frames?

Mr. Poppleton—I don't use wire. I leave about a quarter of an inch space all around.

Mr. Goddard—How do you fasten it at the top?

Mr. Poppleton—Different from any other bee-keeper here, except one. I saw a little groove in the end of the side boards, and in that put a narrow

strip, and let that down, and take a knife and press the wax into that little strip.

Mr. Ramer—I would like to ask Mr. Poppleton if, in putting this thin coat of wax on there, it spoils the cells?

Dr. Jones—I would like to reply that it does not if you smear it on there in quite a big chunk. That is what I was afraid of, that it would, but it doesn't. If you get a chunk of wax on there, you will be surprised how the bees take that off.

Mr. Ramer—I would like to suggest one thing, and that is, that I always have new frames drawn out above full colonies, then they always build that comb down tight to the bottom bars. They won't do that if you put them in the body. And you have a very solid frame for extracting, that will never drop out, because it is fastened all around perfectly.

Dr. Bohrer—I learned to handle frames in the apiary of Mr. Langstroth and I took particular notice how he handled them. In those times, they did not have the frames wired. He would raise his frame and look at it, so that it was always held upright. I can handle combs today without any wire. The more wire you have the better, unless you handle your frames after the fashion of Mr. Langstroth, that is, raising them perpendicularly and keeping them that way all the time.

Mr. Dadant—With reference to the question of putting in full sheets in the sections, I was twice Judge of the Honey Exhibit at the State Fair of Illinois, and one time there were three large exhibits, and I was awarding premiums to the best grade of comb honey. I examined the honey from three large exhibits, and I was about to award the premium, when I found, on looking on the list, there was a fourth exhibit. It was just one case of sections, but it was so far above the others that I had to give the premium to that. Those sections were put up by Mr. Aaron Coppin, of Illinois. His sections were split in the center before putting in the foundation, then one-half of the section laid over, and then four sections together, and then a sheet of foundation laid on that, and then the other half of the section on top of the sheet. When the section was examined, you could see the

crease there. His sections were filled entirely right up to the edge, and that was evidently due to his filling them full and simply pressing the foundation between the sections.

Mr. France—On behalf of this subject that is up for discussion this afternoon, I want to say that it is worth coming 1,400 miles to hear it. If you do not learn anything about bee diseases, this subject of comb foundation has paid you for your trip.

Mr. Huffman—In regard to the split section, you all remember, probably, Mr. Hand last year, at Detroit, used the split section, but, instead of splitting the section all the way around, he leaves the top unsplit, puts the section together and drops the foundation between, and has the full sheet in the four sections. I sent, and got 2,000 of them, and I sent some over to my neighbor, and he tried them and said he wouldn't have any other. It is much easier to put in, and can't sag, and it is full all the way around, and I believe it is going to be the way to put in foundation. He puts in the sheet the full length of the four sections.

Mr. Griffin—The two sides?

Mr. Huffman—The sliding sections come together. I have found, with the foundation I bought, that the width was not quite enough, and the length a little too much, and I am going to propose to certain parties to make it the right length next year.

Mr. Kretchmer—In my practice, I have used both the half section split lengthwise, and, also, merely cut on three sides. We now use, in our own practice, sections split entirely; for two reasons: You can split the sections at less expense than three-quarters of the way; secondly, you can drop the four half sections on to a frame, lay a sheet of foundation on top of it in about half the time you can drop it into the half of a split section.

Mr. Hall—I believe that is right. I believe I explained that, at the World's Fair meeting at St. Louis. I tried ripping them with my rip-saw three-quarters of the way through, that is before I got on to my present method that you will see in the machine in the back room. I tried ripping it clean through, but I couldn't keep it straight enough, couldn't keep up those half pieces and get them

down perfectly with part of the section below it, so that when the thing was filled it would be smooth all the way around and perfectly in line. I tried it time and time again. After a while I got on to the process which I have now.

Mr. Huffman—I did not use very many that I got, but I tried enough to satisfy myself that I was satisfied with the way whether others are or not. When it comes to putting in foundation into the split sections I find no trouble. You can buy them at the factory at an additional cost of 50 cents a thousand, and you can't rip them for that, and they cannot help but hold together, because that foundation is stronger than if just put on the inner side of the section. I don't think the wax will give any additional bad look to the section on the outside.

Mr. Espy—I would like to ask one question on the split section. When they put four sections together, and put that foundation down in the split, and put them in the super that way, and they are built with honey in them when you come to take out your sections how do you divide those sections without breaking them?

Mr. Kretchmer—You take them out of the section holder and take a knife, and they split very readily.

Mr. Hall—The foundation will stretch sufficiently to allow a knife to be put between so that it will not hurt the comb a particle.

Mr. Huffman—Mr. Hand uses a thin case knife, perfectly sharp, and has no trouble whatever.

Mr. Snyder—I have not had any experience personally with that kind of section, but a neighbor of mine used a good many of them last season. I asked him what he thought of them, and he said, as I understand, he would not use any more of them. I didn't get just his reasons, but I think I would go a little slowly on them. I think he discouraged the practice.

Dr. Jones—I would like to enquire as to whether there have been any complaints from the consumer in regard to too much foundation where that coat comes to suit them, or whether the old style of putting in a three-cornered starter in the section and letting the bees build the comb is better, and if it pleases the consumers better? Some of these big honey

producers perhaps could give the information.

Mr. Schlaefli—I think the main thing that the consumer wants is the full section.

Mr. Hall—That has been my experience. I want to get just as much foundation in there as I can. I believe it is economy. An extra thin foundation is what I use altogether, and I use a bottom starter altogether.

The President—The next thing on the program is the Question Box, and I will ask Mr. York to read the questions.

Question—Will a white clover plant that has started from a runner, the same as a strawberry plant starts a new plant, and has become separated from the parent plant and formed a small tap root of its own, say two or three inches long, be of value as a honey producing clover next year?

Mr. Hall—In our locality I would say that it would. The runner produced this year would be a good honey producing plant next year.

Question—How to know for certain that a colony is queenless without opening the hive.

Mr. Townsend—Well, I did not know that I could see through a 7-8 inch board, but I ought to be able to answer the question for I have a queenless colony here in my home yard. How do I know?

The bees told me. How? By their panicky actions the day they lost their queen, racing over front and sides of hive and even hunting the ground over for several feet away from hive. Had I not been at home about that time those indications would have been lost to me, and I might have failed to notice anything wrong from outside appearances. If the bees are going out and in at an entrance with a hustle, and a fair proportion are carrying good loads of pollen into their hive, such an one has a queen; but if no pollen or but very little can be seen, it is queenless, or has a poor or failing one, or else there are but very few bees to care for the brood. As far as I know, the only absolutely sure way to know is to examine, by opening the hive and seeing.

Question—What is the best sign of the failing fertility or energy of a queen?

Dr. Miller — The failure to have combs evenly filled with brood under

favorable conditions, or the appearance of drone brood in worker cells.

Question — How to keep young queens and have them on hand when needed for a colony which has become queenless?

Mr. Hutchinson—It is possible to keep queens in cages, away from the bees, for two or three weeks. Cage them with a few workers and some candy for food, the same as when a queen is to be sent by mail, and they can be kept in some comfortable, quiet place much safer than when sent by mail; but such confinement certainly does the queen no good, although it is possible that it does her little harm. Queens may also be kept several weeks by simply caging them in cylindrical cages, and laying them on the tops of the frames of a populous colony of bees. I think a queenless colony might give them better care, but of this I am not sure. The best way, however, to keep queens is in nuclei. Of course, we then lose the use of the nuclei, but it is not necessary to have very large nuclei. I have used the ordinary $4\frac{1}{4} \times 4\frac{1}{4}$ sections for combs, having three in a nucleus, and eight nuclei in an ordinary super, by putting in partitions. It will be necessary to put a slip of queen-excluding metal over each entrance, or the bees will swarm out. They may swarm out just the same with the entrance guard, but the guard will prevent the queen from following the bees.

Mr. Hall—I wish to ask is that pertaining to virgin queens or laying queens?

Mr. York—It says "young queens."

The President—We would naturally infer he bought a laying queen.

Mr. Hall—I would like to hear something about how to keep a virgin queen.

The President—How long can you keep a virgin queen and have her fertilized?

Mr. Hall—That is what I want to know.

Mr. Ramer—I don't know how long they can keep them, but I know you can't keep them over winter and have them fertilized the next spring, because I bought six queens from a queen-breeder last fall, and five of them turned out to be drone layers, and I found they didn't fertilize and lay this spring. One of them did lay

this spring, but that was fertilized last fall.

The President—Can you keep them ten days with safety?

Mr. Ramer—I don't think so.

Question—Can queens be successfully introduced this fall in a locality where the honey-flow has stopped?

Dr. Bohrer—Yes.

Question—What is the best way to find a black or hybrid queen?

Dr. Bohrer—Go into the hive and look for her.

Mr. Clark—I try an experiment once in a while. I find a good way to find a queen that is hard to find is, if you have got another queen, drop her in a hive, and re-open it, and you will find them both.

Question—Is early gathered honey-dew safe for winter food for bees having some good honey with it in the brood chamber?

The President—That is rather an indefinite question.

Mr. Dadant—I don't believe honey-dew is good for wintering under any circumstances.

Question—How to winter our bees this winter when the hives now have honey-dew in them?

Mr. Huffman—Take the honey-dew out and put in sugar.

Question—What should a ten-frame hive weigh, ready for outdoor wintering, including the bees, combs and honey? Total weight wanted.

Mr. Hall—Sixty pounds wouldn't hurt it any.

Dr. Bohrer—It depends upon the hive. I have some hives that have the heavy Acme covers on, and they are in turn covered with galvanized iron, and that would make quite a difference in the weight of the hive; and the thickness of the board has something to do with it; and then, again, if you use an Acme or Colorado cover, that would make a difference.

Mr. Hall—The edge of the combs, and the amount of pollen in there, would also have something to do with it.

Mr. Clark—On the ten-frame dovetail hive with the ordinary excelsior cover I have been weighing the combs when they have been first drawn out in foundation, and I have weighed the hive bodies separately, and the ten-frame dovetail hive with the excelsior cover and combs, not over two years old, will weigh 31

pounds, so all the rest of the bee-keepers know how many stores it is necessary to keep a good strong colony through the winter; you can easily get at it now.

Question—What is the best way to feed ten or more colonies for winter?

Mr. Hall—In, I think, 1902, when we got back from the Denver Convention, my bees, 63 colonies, were starving, and there was nothing coming in from the field, and they were carrying out brood. I had to do something and do it quickly. After I got off the three o'clock train, and before I went to bed, I went to the sugar sack and mixed up some syrup, and went around to each hive, jerked up the cover and doused in about a teacupful or pint of sugar water right on top of the bees. I don't consider that a really good way to feed, it is a little dangerous. The next day I went down to the store and ordered 3,000 lbs. of sugar; I went to the pasture and got my 16-foot water trough, made of 12-inch plank. In that I already had a float made of half-inch boards, enough to fill it all except sufficient space at one end for the stock to drink from. I went to work and took two 16-inch boards and nailed a lath four inches from each end, leaving a strip up the middle. Up the middle I laid a piece of gunnysack. I put one end of one of these boards in the trough, and the other end on top of this other board, and at the top end I put a barrel with a faucet in it, over which was tied gunnysack, so that the bees didn't get into the barrel. In a week's time I fed 3,000 pounds of sugar to those bees. That was outdoor feeding right in the yard. At one time I tested the bees to find how fast they were taking the sugar, and they took it at the rates of 125 pounds to the hour. Some people would think that was a good way to create a lot of robbing, but I had no robbing whatever.

Mr. Griffin—Were there any more bees in the neighborhood?

Mr. Hall—Yes, there were. There were not any bees closer than about half a mile. If I had continued it any considerable time in the fine weather I would have had a good case of robbing from the other apiaries, but I didn't have it.

Mr. Dadant—Didn't that feed the

strong colonies very much more than the weak ones?

Mr. Hall—It did.

Mr. Dadant—Are not the weak colonies very much more in need of it than the strong?

Mr. Hall—That is true too, but I went around afterwards and equalized them. The next season was the best honey season I ever had. I wrote to Ernest Root, and he said: By all means feed your bees, don't let them starve. My neighbor lost 24 colonies out of 28 because he failed to feed them. They went along pretty well till about midsummer, and the queen got tired and they tried to supersede her, and they fizzled out. I had 7,000 pounds from 63 colonies the next summer. There was no spotting of the hives. There were a few colonies I found a little sugar syrup in along in May. My syrup was one-third water to two-thirds sugar. I would take a pail of cistern water and throw it into the boiler, and at the same time throw in a pail or two pails of sugar. I kept testing it and tasting. On the average it was about two of sugar to one of water. I never brought it to the boiling point. I put a little tartaric acid in it, I don't know whether it did any good or not.

Mr. Bernschein—Mr. Hall's bees are more honest than any I have had in my neighborhood. I never could feed that way for a week without robbing.

Dr. Bohrer—That method of feeding is certainly a safe one in Mr. Hall's own apiary if his bees require feeding. As to the method of preparing the syrup, I think he is correct. I usually fill my feeder two-thirds full of sugar, and the balance with lukewarm water, and stir it till it is dissolved. I have never had to feed all my bees. I put one of those pepper box feeders in at night, and by the next evening the syrup is carried down. The best time to feed I found to be in the latter part of August or September. I want to give it to them early enough so that they can seal it over. The division board feeder, if you have it well waxed, and keep a good float in it, is a good way to feed bees, but you want to be cautious, and keep it well waxed.

Mr. Dadant—I want to emphasize what the Doctor has just said in regard to keeping a float in it. When you remove the feeder, if you don't

put a float in it, you will find probably a pound of dead bees in the bottom of it. Without a float, they are a bee-killer, but with a float that covers the side fairly well, if they happen to fall in they can crawl out.

Mr. Huffman—I have fed quite a bit of sugar, and I have tried a good many different ways of feeding. I have tried outdoor feeding, and I can't help but feed my neighbors' bees. I find the best mode of feeding is the Miller feeder on top of a hive. You can put in about three gallons of syrup, and in less than 24 hours, if you have a strong colony, they will have that all stored away. Another way is to fill your combs with syrup and put them in the hive, and let them ripen that; but you want to feed it early. If you don't feed it early, put on a Miller feeder on top. I feed in that way, and I know just what I am feeding.

Dr. Jones — Last year I had 61 colonies. In our country we had a lot of honey-dew. I got a little scared, and I went to work and I fed about 40 colonies of my bees ten tons of sugar and water, half and half, and I gave it to them cold. I put some excelsior in the pan, and the man who carried them into the cellar said he never carried such bees in. I was afraid they wouldn't winter on that. I put in 61 colonies, and I took out 60 this spring, and the hives of those that I had fed were as clean and nice as could be. Those that I hadn't fed began to get dysentery and spotted up the hive. If they had stayed in ten days or two weeks longer, I think I would have lost most of them.

I would like to say I don't believe it is a good plan to feed late in the evening, at least in our country, in Minnesota; if you do, the bees are in an uproar, and they will keep it up till late at night, and fly out, and some of them never come back. I never had any trouble in feeding right in the day time.

Mr. Schlaefli—I think the best plan to feed colonies is to feed them all at once, and feed them right on top of the hive inside. I never had to feed bees, except in a severe hail storm, when the bees failed to make any honey whatever. At that time I took syrup and fed it all at once in a common milk pan. I fed them for two days, and I must say I never had bees so perfect as at that time.

Mr. Miles—There is no need feeding at this time of the year. If it is necessary to feed them, I would like to suggest putting a little bunch of blue grass down one side of the hive to the feeder, and you can scatter a little syrup on that, and the bees will go down.

Mr. Ramer—I have used all kinds of feeders, and I have settled down to this: That I shall feed out of doors when there are no other bees near, and then equalize. I will do that till I think they have plenty.

Question—How to prepare bees for outdoor wintering in the West or North?

Mr. Hall—I have had some experience in that. In the year 1903 or 1904 I had 126 colonies to winter. I hadn't room in my cellar, so I concluded to experiment, and put 63 inside and 63 outside. The 63 I put inside the cellar were all the lighter ones. I was a little afraid to risk outdoors. The result was, 59 colonies wintered indoors, as against 26 colonies outdoors. Now, my method of packing those outdoors was, I placed the hives in two rows, probably about six or eight inches apart. I put a 12 inch board behind the hives, and then cleated twelve 3-inch boards for a roof, and before I put the roof on I piled all around the back of the hives, down in between them, and up over the top of them, probably about a foot of chaff and straw together, and then I laid these three-inch boards, cleated together, over the top of the straw, and projected them down over the board behind, making a shanty roof that sloped backwards. In front of the hive, for a shade board, I laid another 12-inch board; I laid it on pieces of wood to keep it off the ground. At times, when I thought it necessary to let the bees have a fly, and thought it was warm enough, I let this board down. I did that two or three times through the winter. I thought I had them perfect. The result was, I lost 37 colonies out of 63 outside, and only 3 out of 63 in the cellar; 45 degrees is about right for cellar wintering, keeping the cellar perfectly dark with sufficient ventilation to give the bees air.

Question—How often shall we requeen our colonies for the best results?

Mr. Doolittle—Every two years or

oftener, when any queen shows she is failing.

Mr. Hall—Two years is long enough for me.

Dr. Bohrer—Whenever I find a queen not doing good work I supersede her immediately. As a rule, if my queens are doing fairly good work I let them alone. Two years I think is the rule. I got a queen from Mr. Davis of Springfield, Tennessee, and that queen has done good work for three years, and I won't destroy any queen as long as she does good work. In September or October if the queen has been doing good work all the season I will let her alone. I very seldom have a queen of that kind die during the winter, but about the fourth season they will supersede.

Mr. Bernsheim—I am a clipper; I believe in clipping my queens, and I do that every spring, and I find that at least one half of my clipped queens are superseded every spring.

Dr. Bohrer—I had a young queen that laid a lot of eggs that never would hatch out. Did anyone of you ever have that?

Mr. Poppleton—Yes, I have had it.

On motion of Dr. Bohrer, seconded by Mr. Dadant, the Convention adjourned to meet 7:30 p. m.

Evening Session.

At 7:30 p. m. the President took the chair and said: The Convention will please come to order. The committee on nominations will meet at nine o'clock tomorrow morning, and we hope the entire committee will try to be present at nine o'clock.

The evening's deliberations seem to be composed entirely of a Question Box.

The first question I find is—Honey dew honey, what is the color, and how known for a certainty that it is honey-dew?

Dr. Phillips—There is no uniform color to honey-dew; it varies all the way from a light color to a dark green, and sometimes a brownish tinge. I saw some honey-dew which, after it was granulated, was as white as alfalfa honey when it was granulated. The chief characteristic of it in Northern United States is the fact that it granulates so quickly. We had a good deal of honey-dew in our apiary this year, and it granulated almost as

soon as it struck the comb. There is, on the other hand, a good deal of honey-dew in various parts of the world that never granulates at all. There is some honey-dew that will not granulate inside of five years. I don't know of any other way to tell honey-dew except its taste.

Question—Which is superior, Golden Italians or Red Clover Bees?

Mr. York—Some people write me and tell me they think the long tongued bees are a fake.

Dr. Bohrer—That is a question I would like to hear discussed, if there is such a thing as the Red Clover bee; I would like to know what difference there is—how it differs from the ordinary three banded Italian. I wrote to a queen breeder once in regard to that matter, and he told me he was satisfied of one thing, that they couldn't remain in the hive and reach out into the fields and get nectar and draw it in with their long tongues, but he wouldn't take the position that there was such a thing as the Red Clover Italian bee. I don't believe there is. I never have seen anything of the kind. Bees of the same strain will differ I think as to size, and the tongues will differ as to length, but a strain of bees uniformly that will go into a red clover blossom and get honey regularly, I don't believe there is anything in it; at least, I have never been able to find a man that will guarantee anything of the kind. In 1865 I was in the Army, and on my return home I found a peculiar looking honey in one of my hives; I opened it out, and unless it was red clover honey I don't know what it was. It was hardly a peach blossom color, and yet it was of a reddish cast. We had in Indiana at that time a great deal of golden rod honey, but this was different from that. Mr. Langstroth never claimed there was any such thing as the red clover Italian bee.

Question—The best way to hive swarms which have clustered on high trees or difficult places?

Mr. De Jong—I have a swarm catcher on a long pole; I have had to get on to the wagon and reach up with that. I have given them a good push, and most of the bees would fall in. In that way I get the swarm down into the hive.

Dr. Bohrer—What is the probable height that you could reach?

Mr. De Jong—About ten feet, and I got up on top of the wagon, on a spring seat, and reached as high as I could.

Mr. Saunders—I had a little experience with a swarm clustered on an over-hanging branch of a tree about eighteen feet from the ground; it kind of puzzled me, but I finally made a tripod of long, small poles, and raised my hive underneath them and raked them into the hive and left them there till night, and then removed them. Anybody can make a tripod with three long poles, and it is very easy after you get your hive up there to put them in and leave them there till night, and then remove them.

The President—We have an answer to the question from Ernest Root, which I will read—"In a well regulated apiary swarms should not be allowed to cluster in high trees. This can be prevented by having the wings of all queens clipped, or queen excluders placed over the entrances; but it sometimes happens that a stray swarm will take up with some virgin in the air and alight in an inaccessible place. Where they cannot be reached with swarming poles and step-ladders, the only thing to do is to climb after them. If they can be reached by a spray of water from a force pump they possibly may be dislodged and made to cluster elsewhere or at some point more accessible.

There have been occasional reports of how a shot gun has been used to advantage by sending a charge of shot right into the center of a cluster located at some point where the swarm cannot be reached by ordinary means; but this irritates the bees, kills a good many, and usually fails in its object. Where a swarm has clustered on the end of a limb, some forty or fifty feet from the ground, it can often be reached by the following manner: Tie a string to a stone weighing a pound or two. Get some good baseballist to throw this so that the stone will just go over the limb and lodge in some crotch, if possible. If thrown right, the stone may pass over the limb and make a circle a couple of times, winding the string around the limb. This will give a secure attachment, so that the limb can be shaken by means of the string attached to

the stone. If this limb is shaken vigorously for a period of fifteen or twenty minutes, the bees will lodge on some other point, usually nearer ground, where they can easily be hived by means of a step-ladder, or step-ladder and pole with basket."

Mr. Bernscheine—This reminds me of a case that came to my notice last summer, a neighbor of mine who was just starting in bee-keeping had bought a few colonies in the neighborhood and came over to me, and he says, I will give you a dollar to go over to my place and hive a swarm of bees on a tree about twelve feet from the ground. That wasn't much of a job for me. He didn't tell me the bees were on the trunk of the tree. We had two ladders strapped together, and I made as good use of myself as I could to climb, and we had a hive perched on the top of the ladder. I went up well prepared to smoke, with a veil over my face. They were all around the tree about a foot in diameter. As I began to brush and smoke they began to fly, and they went off about one hundred feet farther west and clustered in a basswood tree. They must have been at least sixteen or twenty feet from the trunk of the tree, and at least fifty feet high. I said, I am done with them. He said, What can I do? Said I, get a couple of long poles and then tie or nail them together, and then on top of that get a strong wire with a hook on and hook on to the limb close by, and shake the bees off. They will go back again if you stop, but keep shaking. He said, all right. He did so. The next morning he came and said, we got the bees. I said, how did you do it? He says, we hooked on and shook, and shook and shook, and finally they came down and clustered low so that we could hive them, and we did.

Mr. Dadant—In the remarks made by the gentleman who has just spoken he speaks of smoking the bees on the trunk of a tree. If you take a comb, especially one containing brood or even dry comb, and if you put that next to the bees, with a little smoke they can easily be driven to that comb, and you can then get your swarm.

Question — What is the average weight of wax in a Langstroth frame?

The President—It is suggested Mr. Brown answer the question.

Mr. Putnam—In conversation with Mr. Brown he told me that he got about four pounds of wax out of a ten-frame hive.

Mr. Poppleton—The combs that I use are about the size of the Langstroth. I tested that a little this summer, and out of 100 of those combs I secured, I think it was, 32 pounds, or nearly so.

Mr. Hatch—The answer to that question is based on the usual results obtained where foundation running seven sheets to the pound is used, or, in other words, I usually get two and one-half pounds of wax as an average from ten Langstroth frames.

Mr. Dadant—The quantity of beeswax in a comb depends on the age of the comb. A comb that has been built the same season will be lighter in wax than combs that has been built longer. I think you will all recognize that if you call attention to your section. If you have a section built the same year, you know the comb is very light, but let that be carried over till the next year, and you will notice your comb is very much tougher. The bees add wax to the comb. The older your comb is, the more beeswax it contains. The edges of the comb will be built with little projections—burr combs, we call them. All that is beeswax, and adds to the weight.

Question—What percentage of wax can a wax-press save?

Mr. Hatch—Fifty per cent.

Mr. Poppleton—I deny that, up hill and down, positively. I get a good deal more than fifty per cent of the entire weight of the combs before I put them in the extractor at all, and how they can possibly get 50 per cent of the wax lost when I get a good deal more than 50 per cent before it is extracted, is something I can't understand.

Question—Take 100 pounds of old combs, what amount of wax can a wax-press get out of them?

The President—That is practically a repetition of the former question.

Mr. Poppleton — My answer does not refer to the wax-press at all.

The President—The question says a wax-press.

Mr. Hall—That is an important question, I believe, but it seems to me I

would rather talk about it in a backward way, what amount of wax will a good wax-press leave in the comb? I have not got a wax-press, but I have been anticipating getting one for some time. I have never been able to find one that I thought it would pay me to get.

Mr. Kretchmer—Taking old combs, it is almost impossible, with any kind of press, to get more than 80 per cent out of the combs. Yet, if the combs are not too old, a boiler wax-press will take out 90, and some times 92 per cent. You can repeat the process by allowing the water to pass through again, and, with additional pressure, get more wax out. With steam it cannot be done.

Mr. Dittrich—Mr. Hershisier, with his press, gets about 95 per cent.

Mr. Snyder—There is a great difference in different kinds of presses, as I have proved this past summer. I had one of these German presses the last time, and I pressed down three large cheeses which were made up of old combs, and I was unable to get any wax out of those cheeses with the steam presses or the German press. This summer I got the new Hershisier press, and out of those three cheeses I got 26 pounds.

Mr. Kretchmer — The word "German" is misleading. I traveled quite extensively among German bee-keepers a year ago, and I found they all, without any exception, used a boiler press.

Mr. France—With reference to rendering wax, in going over our State as inspector and finding a great many diseased combs and old brood-combs, I try to save for the bee-keepers all I can by saving the wax. I find there is a decided difference in the principle of saving wax between our different presses. Those presses, using the term "German wax-press," that press melted slumgum into a dry cheese will not save near the per cent of wax that you can in any form wherein that pressure is down under water. Wax being lighter than water, and in using the Hershisier press, or any press involving that principle, as you press it the wax comes above, therefore you save quite a percentage more of wax than you can with the German press. Again, with the German press we lose more than half the value if too much is put in at once. I

remember one lot which we were melting, and about two and a half pails of the ordinary milk pails were put in one press, and the cheese when pressed was about four and a half or five inches thick. I broke it in two, and there was good cupful of melted wax in the centre which couldn't escape. So that this principle of pressure under hot water, giving it a chance to rinse and wash, and again pressing, has a decided advantage. Upon many of the farms where they have but a few bees one of the better presses costs too much for the farmer to afford to keep, so I have upon the ordinary farm used such conveniences as I could find, taking an iron kettle and making a slatted arrangement to go in near the bottom of the kettle, and another slatted follower, and putting the broken comb in a sack between the two, and when melted, applying a lever pressure, which amounts to the same thing as the screw. Iron discolors the wax, and for that reason I want to get it out of the iron kettle as soon as I can and let it cool in wood or tin or copper. The more water used the better the wax.

Mr. Kretchmer—Another feature in getting a little additional wax is to take old combs and soak them first before submitting them to heat and pressure. In that way the water soaks up the old dry cocoons, and then when filled with water these cocoons do not absorb as much wax.

Mr. Dadant—I wish to add my testimonial to the merits of the Hershisier press. We melt a great deal of beeswax, and we melt residues, and the Hershisier press has given us the best satisfaction, but I must mention one thing, most people press too fast. When we make wine we press our grapes, and if we press them too fast we form a hard shell on the outside, and the seeds and skins are brought together in the pressure. Press slowly and let the juices escape, and as you give them more room add to your pressure. It is the same thing with beeswax. If you press too fast you will have a shell on the outside which will keep the beeswax inside. It will be much more difficult for it to escape than if you pressed slowly allowing it to gently come out, and as it comes out keep pressing it a

little tighter. Take more time and you will get better results.

Mr. Brown—I have always found in working wax in order to get a good result from it, it should, if possible, be melted up and pressed as quickly as possible after it is melted. If your water, or the apparatus, or whatever you have got, is hot enough so that they boil up with a good bright, yellow fluff, the slumgum will come out better than if it stands for any length of time. If it is allowed to stand, all the cocoons will raise above the water and the wax seems to go right under, and while you will press practically nothing but clear wax, you don't get the value out of it. There is not water enough in it to take the place of the cocoon and carry out the wax when pressure is applied.

The President—What is the experience of the Convention in overheating of wax? Mr. Dadant, can you give us some thoughts on that?

Mr. Dadant—Beeswax can be overheated with water by over-boiling. The water in boiling through the beeswax will beat it into a grainy substance which looks like a pulp. You can change your cakes into powder from one end to the other by over-boiling—by allowing the water to beat your wax into a grainy mass. If you have seen something like corn meal at the bottom of your cakes, it is beeswax, and the only way in which you can return that is by dry melting. There are several things about the rendering of combs that are of some importance to know. Do not melt your beeswax with water in pans that contain iron at all; iron will turn your wax black. There are a number of little points that should be considered. Do not use any acids in rendering wax. Most people, when they do use acid, use twenty times as much as they need. It takes the smell of the bees out of the beeswax. Our friend, Mr. Kretchmer, said soak your combs a long time. That is right. Take the old combs and crush them as much as you can, so that they will not take in the beeswax. Those cocoons have the shape of a honey cell, and they remain there after they are crushed, and there is no chance of the beeswax getting into them. Put your combs in clean water and melt them. It is not necessary

to use a press until you have taken the best of your wax out. We never do use a press with cappings, but we use a press for the residue. A gentleman asked me a question. The boiling must be with water, and if you spoil the beeswax and get it grainy, that part which is grainy, and which is more or less dirty, and which contains a good deal of water, must be returned to good shape by dry heat. Then you will not have as good beeswax as you would otherwise have. I have had shipments of beeswax that were so badly beaten with water that they would lose 20 per cent; it wouldn't look very much like beeswax; it would look like a cake made of ground corn. I had a discussion, a long one, in regard to pollen and beeswax. I didn't know at first that there was any such thing, but I found it out when we were making foundation. We were throwing away our residue containing that grainy substance. In the course of time it melted in the sun, and in the course of time we took up this residue and got 100 pounds of beeswax from it.

Mr. Brown—What would cause wax heated in a copper tank, being used for dipping foundation, to turn black and become grainy that way? It was kept hot, but there was no boiling or water connected with it.

Mr. Dadant—It would be impossible for me to answer the question unless I knew all the particulars. We use copper tanks, but they are tinned inside. If wax remains in a copper boiler that is not tinned, it will turn it green; it makes verdigris—Paris green. But, I do not know, I have never seen the effects mentioned; that is, of wax becoming grainy if there is no water in it.

Question—What are the relative merits of the Caucasian and Italian bees?

Dr. Phillips—I suggest you call on Mr. R. A. Morgan.

Mr. Morgan—Some few years ago I received from the Government some Caucasian queens, and I have been testing and trying ever since what their merits were. Before that I had been using the yellow bees, the Italians; some I got from Root; some from Doolittle, and some back as far as those that Langstroth sold, and my experience has been that, the Caucasians are superior to the yel-

low bees in every respect that I have ever noticed, both as honey-gatherers and as to hardiness; they are more energetic in honey-gathering, and more docile in handling, and it would be impossible for me to think of going back to the yellow bees; I wouldn't take the best stock of Italian bees and run them without superseding their queen, if a man gave them to me; I am just that much of a crank on bees. I prefer the Caucasian bee to any other race I have ever seen, and especially to the Italians. They are much more easily induced into the boxes.

Mr. Dibble—I would like to ask Mr. Morgan something about the swarming tendencies, and, also, about their faults; if they are worse than Italians as to propolis?

Mr. Morgan—I don't think they are more likely to swarm than the ordinary Italians, that is, the hybrids, as they are generally kept in this country. Of course, the very best strains of Italians, when they are pure, are not quite so liable to swarm as the Caucasians, but, for me, that is rather a good feature. They are more industrious and more vigorous; and, as I said here once before in this room last winter, when any animal or stock of bees is in a very vigorous condition, they are more likely to increase and swarm than they would be otherwise. Other things being the same, I don't think they are any more liable to swarm than the Italians. In regard to propolis, they gather a good deal and use a good deal of it around the entrance to the hive in the fall of the year, in order to protect themselves. I think that is a characteristic they may have by living in a Northern climate. I think they do not use the propolis around the honey any more than other bees.

Dr. Jones—I would like to enquire how they are in regard to gentleness in comparison with the Italians?

The President—I thought Mr. Morgan answered that question.

Dr. Phillips—I think Caucasians are by far the gentlest bees that have ever been brought into this country. I have never seen any Italians that would compare with them in gentleness, and I would also agree with Mr. Morgan in regard to their propolizing tendencies. They do propolize their entrance almost solid, but they ap-

parently do not propolize any other parts of the hive any more than any other race. The chief objections I would have to the Caucasians is that they build burrs and burr combs over everything. Do you find that, Mr. Morgan?

Mr. Morgan—Yes, I find they do not do that so much in a well spaced hive.

Dr. Phillips—Even in that kind of hive they will often build comb into the proper space, and that was, to my mind, the worst feature of the Caucasian. Their propolizing has never seemed to me to be anything serious, and I am inclined to agree with some of the Russian writers in attributing this tendency to the fact that it is a very primitive race. Italians are one of the more highly specialized races. If a colony of Caucasians or Cyprians is made queenless they raise a large number of queen cells, or if they fail to raise queen cells they very easily become fertile workers, showing that the division of labor between the queen caste and the worker caste is not so well defined. I would therefore consider that races with such characteristics are more primitive; and I think this propolizing of the entrance is the going back to an ancestral condition where they had to build not only an entrance, but perhaps a large part of the nest. It may go back to something like a bumblebee tendency, particular the stingless bee of South America.

Mr. Darby—I had a little experience just last week in handling some of these bees, and I want to say that this burr comb is one of the worst features I see about it. One yard was so badly glued up that the owner took his hand axe and went at it with main force to get those frames loose so that he could examine them. I find when they are crossed that they are as bad to sting as any bees I know of. In fact with those that I have had to work with I have not seen the great difference in the gentle qualities that some speak of, but I know there is a great difference in different strains of bees, and I think possibly these were not of the gentlest. Another thing I noticed was that in these yards there was not the honey that there was in the neighboring yards of the Italians within a quarter of a mile of them, and I have noticed this difference two years in succes-

sion. The owners are doing their best to get rid of them. So that there is a difference in the bees or a difference in the people handling them. One man was so disgusted with them (his start was given to him by a friend, and he is a very rough man and uses very rough language) that he said he would just as soon the man had given him the Prince of the warmer regions. (Laughter).

Mr. Snyder—Of course one swallow doesn't always make a summer, but I have had one colony of these Caucasians, and this is the second summer, and I have not observed any of these bad qualities. They have neither built burr combs nor propolized their entrance, and this one colony has gathered more honey than any other colony in the yard. I have some very fine Italians, but this colony of Caucasians has outstripped them a little bit this summer, and they did not swarm either.

Mr. Morgan—I would like to admit the facts with regard to this burr comb question. I didn't think of that at the time I spoke first. I will admit they are a little more likely to build burr combs than any other races I have seen, and the only separator I have been able to use with success is the tin separator, and I have tried four different kinds this season. I use wire, quarter inch mesh, galvanized, and I use the solid wood. I shall Caucasianize anything I have hereafter, no matter what color they are.

Dr. Phillips—I have noticed one rather striking thing in regard to the crosses between Caucasians and other races. I noticed in a striking manner particularly last winter the fact that they propolized the entrances. We maliciously left the hive entrances wide open to see what they would do, and they did all that we could expect, where they were pure Caucasians. Our bees are very close to some good Italian bees from one of the best breeders in the country, and whenever the Caucasians had interbred with the Italians the entrance propolizing was almost entirely absent, and the brace and burr combs were almost always entirely absent, but the cross of the Caucasians and the Italians is about as cross as the two combined; there is no half way business in gentleness between the Caucasians and any other race; they are decidedly ungentle. In

fact that is about the quickest and easiest way to tell whether you have bred your Caucasians purely or not.

Question—Is bee-keeping not rather a loss than a profit to the general interest of apiculture for persons who know little or nothing of the habits or scientific care of bees, and do not and will not read or study standard works, or read standard periodicals on bee-keeping to help them?

Dr. Bohrer—I have made it a custom for several years, especially since foul brood has come into the country, to discourage all persons who know nothing about the management of honey bees. When they talk to me about buying them, I tell them unless they do something of that kind—study standard works on the habits and management of the honey bee, and read the Bee Journals—that they can buy decidedly more honey than they will ever get out of bees by owning them; and they will let foul brood get into them and cause more trouble than one can imagine. I believe it ought to be discouraged by bee-keepers throughout the length and breadth of the land except where they go into it and study the habits properly. They know nothing about the diseases of bees, and when they get among them they are about the hardest class to deal with, to allow you to go to work and effectually treat and rid them of foul brood. I find it is so in our country. One man threatened to prosecute me if I reported any more that he had foul brood in his apiary. I said, if you don't get rid of foul brood, I will cause you to be prosecuted and destroy all the bees you have. Then he permitted our County Bee Inspector to go and examine the bees, but before he would agree that he should take comb and honey all away from them and treat them properly, he must cut out some isolated patch to see if he couldn't cure them in that way. The inspector said to me, What do you think about that? I said, if it happens to be confined to those localities he may perform a cure, but otherwise it will spread. I said, You go back. He went back, and it was still spreading. For reasons of that kind I discourage in every way possible those that know nothing about bees from owning them at all unless

they intend to study their habits and management properly. I don't want to be dogmatical about this matter and only state matters as they really exist. I want to find out if other bee-keepers do not find it a good deal that way?

Mr. Morgan—There are just about three classes of bee-keepers that ought to be recognized, the one who keeps bees for a profit, the one who keeps them for scientific research, and the ones who make a nature study of them. Aside from that we want to discourage the keeping of bees by the ordinary one frame hive people. I don't know of any way to prevent them; I don't know of any way we can pass a law to discourage them keeping them.

Mr. Darby—I just want to say a word or two. I find the class of people that give me the most trouble in my work of inspection in our State are those that get the least benefit from their bees, those that have a few colonies in old boxes or some old buckets or barrels, or something of that kind, that they never get any honey from, or scarcely ever, and let them stay there and act as hot-beds for spreading the disease of foul brood in the neighborhood. If we discourage anyone from keeping bees, we should discourage those that will not take an interest in it. I find it very difficult to go out and tell people in my work that they should not keep bees, but I do tell them this, if they keep bees they must keep them right; they must take interest enough to look after them and keep them properly. If we can discourage that class of people we are doing some good and helping the cause.

Mr. Miles—I agree with what has been said, but there is one little phase of it that has puzzled me. I have a nearby neighbor who thinks he can raise honey cheaper than he can buy it. I have had him come to me and say, I have got a swarm of bees down there, can't you fix it up, I am a little afraid of it. A person hates to tell that neighbor that he should not keep bees, that he ought to buy his honey; but we should discourage those kind of cases.

Question—Has a bee-keeper a legal right to kill birds which are killing bees? H. D. Davis, of South Newbury, Vermont, is under arrest for killing pee-wees. Also bees are killed

in great numbers at a cider mill in the fall. Has the bee-keeper any redress or remedy?

Dr. Bohrer—No, he has no redress. I am a great friend of the birds, but there is the bee marten which I shot every time. I have an orchard of over 600 apple trees, two or three hundred peaches, and as many cherries, and they built in trees of that kind, and you can hear them about among the trees; they are darting all through the air; and if you have got a large apiary every once in a while you will lose a queen. I shot probably fifty of them last season. I don't keep it a secret. If they want to prosecute me we will try it out. I don't think there is anything in the law of our State that prohibits the shooting of birds of that kind that you can demonstrate are a positive nuisance.

Mr. Kretchmer—It depends to some extent on the wording of your State law. In Iowa the birds are prohibited to be shot except birds of prey or migratorial birds. The birds of prey may include those that kill our bees.

Mr. De Jong—Last summer while the alfalfa was in full bloom and I had my shot gun with me, and I was watching for the bee marten, I saw her take bees. Then I shot her and opened her up, and she was full of bees from one end to the other. Then there is a little gray bird that does the same thing.

Mr. France—I think it is what is called the Shrike—the Loggerhead Shrike.

Mr. Goddard—I would like to suggest that the bee marten has a beautiful red flower tinged with yellow in the forehead; you can't see it unless you open the brown feathers, and the proposition to me is whether that is not put there entirely for a decoy for the purpose of decoying the bee near to it. I was taught that when I was a boy. My father kept bees. It was discussed through the Literary Digest. I see now it was discussed through the Bee Journals, and I took a bee marten's head and sent it to the editor of the Literary Digest, and he said he had never heard of that before. I would like to know if the members of this Association know whether they do use that blossom as a decoy.

Mr. De Jong—I would rather think

not. She would sit on the fence post, and I could see the bees going not more than six steps from her, and the minute a bee lit on the blossom she would swoop down and get it.

Mr. Snyder—I don't think they are in the habit of using the blossom, as they call it, as a decoy. I watched one of those bee-martens a good deal this summer that was in the habit of coming into an apple tree in the apiary, and she would sit on a little dry limb and make a dive for a bee and get it, and then a dozen other bees would chase her out of the yard. I think the bees recognize them as an enemy.

Mr. Gerald—Some years ago I think Prof. Cook, of California, gave a description of those birds, and he says they are both bee-martens; the light colored bird has the same red spot in its forehead that the gray one has. We have both of them, and I have shot both kinds, and I shoot them because I know they are taking the bees.

Mr. Lommedieu—This summer there was a brown mocking bird got a notion to catch bees to feed her young birds, and she caught a good many bees from one hive in particular. I noticed her come and go to that one hive more particularly but still I have seen her catch bees from other hives and kill them. She would go back about a foot from the front of the hive and all at once make a dive for a bee on the bottom board of the hive, and then fly off and give it to the young birds.

Mr. France—This question was sent from a long distance to have it discussed on the point of the legality. The man mentioned in it is under arrest. One of our platforms is the defense of our members, and he being a member of our National, I replied to him in this way, that I had found no law in any State, so far as I could gather them, but what he had a legal right to the protection of his property. If the State law includes the pee-wee among the birds protected by law, under the ordinary interpretation of the law he would not have a legal right; but where he was protecting property that could not be protected otherwise he would have a right to protect it on the same basis that a man has a right, if he cannot protect his own property without the use of

the gun, to drive a robber away from his own property with it. As a test, which may be somewhat of a parallel, a few years ago when the timber was in abundance about my place, adjoining it I had several acres of blackberries. The birds would gather in there and in a short time take sufficient of the early morning berries as to amount to cases of the berries mutilated and destroyed. I resorted first to using the shotgun with blank shells and scaring them away, but it was not sufficiently effective, and finally I resorted to killing some of the birds. Our officer from the city came out and said, "I understand you shot some robins yesterday." "Yes, sir." "You know the law says differently; you are not allowed to kill robins?" "Yes, sir." "Don't you know you are subject to arrest for killing birds?" While he was talking, some more birds lit upon a bush and were destroying the next morning's pickings. I said, "Mister, would you stand here and see a thief, right in your own view, taking tomorrow's berries, and you have no protection?" And I up with the gun and killed the birds, and I said, "Take those as evidence of your own personal view of my killing them, and take me under arrest." "Yes," he says, "I will." He went to our City Attorney and he promised to come back. He did, and he said, "It wasn't wanton destruction?" I said, "No, sir; I was saving property." He said, "Say, the next lot of young birds you shoot, save them; they make a splendid pot pie."

If you are doing it as a means of destruction, taking the lives of the birds without an object, then the law does protect our birds. Birds do a vast amount of good for us that we do not give them credit for, even in the orchards, by the way in which they save the trees by taking the insect life, and, and for that reason, they ought to be cared for. But there are cases such as this man under arrest. However, he has been dismissed.

Mr. Lax—Being an admirer of bees myself, I love to see them work, and I always observe them very closely. There has already been a good deal said, and it has made an impression on my mind. I want to say this: That I believe the bee has got the pre-eminence over the bird, because the

good book we call the Bible, which is the word of God, mentions the bees a great many times, while it does not mention any of the birds, as far as I have seen. Samson killed the lion by the roadside, and the next day, when he came along, what did he find? A swarm of bees. And when John the Baptist was in the wilderness preaching repentance to the Jews, his food was locusts and wild honey; and the Bible says there is nothing as sweet as honey.

Question—Would I have better success if the hives stood in the sun the year round?

Mr. Dadant—No.

Question—What is the best plan for comb honey and not have many swarms?

Mr. Morgan—To the first question, which, as I understand it, is, which is preferable, the shade or sun for bees, I would say, as far as my experience goes, that the sun is the better place, with a board shade, something that you can handle and take off and put on at your leisure, and not a large tree shade, as some prefer. I would prefer the open ground, and if we had trees, to have them very small, and not large enough to shade the hives.

Mr. Lawrence—If he lived in Florida, he would want the shade.

Dr. Jones—I think if you kept bees in the sun the whole year round, you would have a bee funeral on your hands, and you would be the chief mourner. I think it depends a great deal on the locality.

Question—Is the Root capping melter a success, and a good thing to use?

Mr. Ramer—I used one of them this summer, and I came to the conclusion that with all new combs I liked it very much, but where you have old combs it doesn't work so nicely. Where you have but one yard of bees I don't think I would use it. Where you go to one yard and extract a day here and a day there, and you have comparatively new combs, and you have your honey and wax all melted up and separated at night you are done. As far as new combs are concerned I would consider it a success, but if I had many old combs I wouldn't.

Mr. Dadant—Isn't the heat of the machine in the way?

Mr. Ramer—It is somewhat unpleasant, and I have been wondering what an electric fan over me would cost. I noticed one of the Hutchinsons objected to the color, and we took that honey and we placed it in two glasses, and it was slightly colored, and I asked different ones if they could see any difference in the color, and we sampled them, and some said the honey had been through the capping melter which gave it a little peculiar taste, but they thought that was the best honey. I took some of that honey, and I mixed it with an amber honey, and I thought it improved the amber honey very much.

Mr. Goddard—Mr. Chairman, I used one of those this summer, and I found just as Mr. Ramer states, that new combs melted up as fast as we put the cappings in to the capping melter and left nothing behind, but when we had old combs they didn't melt up entirely and it was inclined to clog up.

Mr. Brown—I couldn't find a plant where a person was running a capping knife and was using even the newest and best combs, or trying to melt sections, that he could melt them with rapidity enough to pay for his time and trouble and the extra heat and not color it. When you come to old combs the machine won't work at all.

Mr. Dadant—We have had considerable experience with extracting honey. We have a number of apiaries. We have been extracting since the 60's. We had an extractor long before the manufacturers made honey extractors, and we have had quite a long experience in the matter. I suppose you all know that the uncapping can is called after me. We have had a large number of colonies and honey to extract, and we used pans and sieves, and I don't know what not, and we had nothing convenient. I conceived the idea of having a large can and using a sieve. We have been using a large capping can and we are still using it; it was made strong, of heavy tin; and had a strong pivot in the centre, and we can go and extract all day; it holds about as much as a barrel. The cappings fall into the can the sieve, and the honey drains to the bottom. When evening comes we prepare for the next day by dumping those cappings in a barrel with

the head off. We keep on doing that until we are through. Then we have three or four or five barrels full of cappings that are partly drained. While we are doing our other extracting those cappings keep dripping off and the honey goes to the bottom of that barrel. We take the top of the cappings and put them away til they are almost dry. We thus have the cappings that are almost dry when the season is at an end, and there is very little honey wasted. The honey we get is all good. We wash the cappings and use them for vinegar or wine making—that is the honey that is diluted out of the cappings. I think it is a great deal better than to try to melt the wax because then you color your honey and hence give it a little taste.

Mr. Poppleton—My practice is very similar to Mr. Dadant's; I have raised extracted honey almost as long as he has and perhaps in nearly as large quantities. I use almost the same apparatus in the way of decapping cans, but I run them through a solar wax extractor and get every ounce. I don't lose a thing. That honey that goes through there is clear. I keep that in barrels by itself and send it off, and never have a dealer dock me a farthing for that kind of honey. It is not, of course, on an equality with the fine white clover honey. If you are docked anything in the price of that up here it is simply one or two cents a pound, just a small amount of money. There is a great deal more honey in those dry combs than anyone would think till they test them. I save from two to three barrels every year of that kind of honey. I would decidedly prefer the solar wax extractor.

Mr. Dadant—Mr. Poppleton's method is very good, but I want to warn the bee-keepers against this, if you melt your cappings in a solar extractor, your wax is more or less sticky with honey, and if you have foul brood you run the risk of shipping foul brood when you ship that beeswax. Therefore, if you follow Mr. Poppleton's method be sure to render your beeswax by hot water afterwards; that is, in case you have foul brood.

Mr. Barber—We have been using one of those capping melters from Root's, and the first three hours I worked it I thought it was a pretty fine thing. I took some of the honey into the house for dinner, and couldn't tell

the difference between it and the extracted. We turned off the heat partly, and when we went back again the old combs in that screen filled up with what had got in before getting kind of cold, and in a little while I went down and said, Henry, what is the matter with that thing? He said, nothing; he didn't melt fast enough he guessed. I said, There is something the matter with it, and I came to the conclusion that this sieve had filled up with old combs and had not melted. So I put on more fire, and in an hour or so I went out and I got two or three gallons of honey of a pretty dark color. I didn't dare to feed it to the bees. If the melter is handled all right, it works all right.

Mr. Lommedieu—I find by mixing the cappings up with the honey, and not draining the honey out of the cappings, but using a stick like a potato masher and mashing the cappings all up thoroughly, that it only takes two or three minutes, and by dumping them on to a coarse cheesecloth strainer they will be practically pretty near dry by the next morning. If you want to finish the job you can set them to drain into something. It works all right for me.

Dr. Bohrer—There is a reptile in the country, in Kansas, that destroys a great deal more bees than the birds do, and that is the toad. If anybody knows how to shut them out of the hive by an inexpensive method I would like to know what it is. I have caught great big ones as big as my fist right at the end of the hive. Mr. Quinby, in a work of his which I have, recommends putting a broad board around the apiary; but if one has a large apiary it would require quite a large number of boards to put them right around to shut the toads out. That they will reduce a colony in a few days and reduce them very materially, is a fact. I don't know of any other plan than to kill them, and I don't like to do it because they catch a good many insects.

Question—In preparing bees for winter, would it be a good plan to remove the center comb to make room for bees to cluster? Answer—No.

Question—Which of two colonies at beginning of honey flow, if six weeks before one should have plenty of stores, the other given same amount during the six weeks, equal amount

daily? Answer—Much depends on location. Generally plenty of stores.

Question—Is a colony over too large at close of honey flow, or beginning of winter? Jacob Huffman, of Wisconsin, answered that in his talk on wintering.

Question—Is it possible to feed when weather is warm and no honey flow and keep down robbing? Yes, feed inside the hive. Miller feeder.

Question—How about wintering bees outside in Danzenbaken shallow super hives? Answer—Can be done in the south.

Question—Has the Alexander treatment been effective for black brood with amateurs? Mr. Wright, of N. Y., answers The Alexander method of treatment for European foul brood has not been adopted nor likely to in N. Y.

Question—If nearly all my bees were queened this year from purchased good breeder, will it pay me to next year buy another breeder to rear queens from, or use same one? Answer—Yes, I recommend purchase of second breeder to rear better drones for mating in apiary.

Question—What is best way to keep Alexander feeder in place? Let the weight of hive rest on feeder.

10:00 P. M. On motion of Mr. Southworth, seconded by Mr. Dadant, the convention adjourned until Thursday, 9:00 A. M.

Morning Session.

Thursday, Sept. 23, 1909.

At 10:15 the President, Mr. Hilton, took the chair and said: The Convention will please come to order. The first thing on the program is "Foul Brood," by R. L. Taylor, of Lapeer, Mich. I think there is a paper from him to be read.

Mr. France—Mr. President, Mr. Taylor, of Michigan, unable to be here, has mailed, through our Secretary's kindness, his paper here. I have not read it, but, as best I can, I will give you the paper. It is as follows:

FOUL BROOD.

To attempt to write anything new upon the subject of foul brood must be the despair of any one not scientifically trained, as well as scientifically equipped; you would not expect me, therefore, to undertake it, nor would it be useful for me to detail

in your ears what you have heard a hundred times about the characteristics of the disease, or the proper method of its cure, so you will be relieved, then, to know that I must restrict myself to the making of a few remarks which may be of some interest to some of you.

What is the appearance of the larvae of the bee when they first become affected with foul brood? For myself, I cannot undertake to say definitely, but I find it is a point which causes uneasiness in the minds of many when they first find themselves confronting this disease. The dead brood, which is by no means uncommon in most apiaries in the early part of the year, seems to be the cause of considerable concern, on account of a lurking fear that it is the effect of the early stages of the disease. To satisfy one person in such a case, I sent a sample to Washington, where it was diagnosed as "pickle brood." No doubt, as McEvoy teaches, there are often cases where larvae are found dead on account of want of proper nourishment, as well as from chilling, too. The ropiness of the dead matter is the only sure sign, so far as I know, that applies in all cases.

May we be allowed to harbor the hope that we are eventually to be master of this disease, and to finally exterminate it? It is not an uncommon thing to hear, or to read remarks revealing the conviction that that is a consummation that may reasonably be expected. Take tuberculosis, a disease of mankind, is that to be soon eradicated? Yet by as much as man's interest in the eradication of that disease is greater than his interest in the extermination of foul brood by so much must his efforts to master that disease exceed his efforts to root out this one; yet there is no one so far rash enough to look for the banishment of the great white plague in the near future. No more are we to look for complete freedom from the ravages of foul brood in this generation. But there is no cause for despair, though the price of this freedom, in the case of particular apiaries, is, like the price of liberty, eternal vigilance. If one were in a position to learn, he would be surprised at the number of colonies that have their abode in buildings and in hollow trees. In this fact lies a difficulty which

is practically insurmountable, because no community would submit to the expense necessary for the extermination of the disease from forests and buildings. Intelligent care, however, will guard against serious injury arising from these sources. But there are some who will, no doubt, claim that I am putting the matter too mildly, for they still insist that the germs of foul brood originate spontaneously in the dead matter of chilled and starved brood. This, if proved to be true, would be fairly alarming, since it would be hard to guard against. For myself, I deny its truth, and still say, as I said years ago: In Virgil's time, bees were bred from the carcass of an ox; when good Izaak Walton lived, the fish called the pike bred from pike weed; lately, chess grew from wheat, and now foul brood grows something else.

Well, bees, and fish, and chess, have now come to increase normally, and if foul brood has not yet, it very soon will. No, it is still true that men do not gather grapes of thorns, nor figs of thistles.

R. L. TAYLOR.

Mr. France—I would recommend, on behalf of the Program Committee, that all the papers be read before the discussion. I think it would be wise.

The President—Does the recommendation receive the support of the convention? If there are no objections, the recommendations will stand as made by our General Manager.

The next paper will be on "European Foul Brood," by W. D. Wright, of Alhambra, N. Y.

At the request of Mr. France, Mr. York read the paper as follows:

EUROPEAN FOUL BROOD.

Fellow Bee-Keepers and friends: Your worthy Manager and Secretary have asked me to furnish a paper on the above subject, but as I have been telling this association for several years past nearly all that I knew about it, I cannot understand how they expect me to give you something new and interesting along this line. However, it may not be out of place to reiterate a few important points.

To those already afflicted, and to all others within several miles of this scourge, I would say, Italianize, first, last and all of the time. It is very exceptional to find an Italian apiary badly affected with this disease, so much

so in fact, that in making a preliminary examination of an apiary, I often skip the Italian colonies. Now, friends, please don't conclude from this, that I am careless and lack thoroughness in my inspection work, as it is only by long experience in this line, that I am able to decide in a measure, by the appearance of the bees at the entrance of the hive, what is contained within. No doubt Brother France can corroborate this statement.

The three banded or leather colored Italians are the only strain or race that I can recommend for this purpose.

I notice in the September number of the American Bee Journal that one of the Canadian Inspectors, Mr. Scott, has discovered a strain of Golden Italians that seem quite immune to this disease. It must be a very exceptional strain, as I have failed to find such in ten years of inspection work.

In my territory, I strenuously advise the Italianizing of black, cannolian and hybrid bees, in advance of the tidal wave of disease, thus saving much labor and expense to their owners, which would be entailed in treating this disease, not mentioning the loss in surplus honey, when an apiary is strongly invaded by it. The old proverb, "An ounce of prevention is better than a pound of cure" is applicable in this case.

Mr. J. L. Byer, of Ontario, reports that this disease will spread all through an apiary in a few weeks when there is no robbing going on. I am at a loss to know why this is so. I have found the spread so rapid, except following the robbing period in the spring, where foul brood honey has been exposed and been taken freely by the bees throughout an apiary of black or hybrid bees, then as brood rearing increases, the amount of disease keeps pace with it.

I still recommend shaking as the quickest and best method of treatment during the honey flow. This method is usually effective with any race or strain of bees, but unless they are Italians the apiarist may reasonably expect to repeat the treatment the following season, if foul brood is rampant in his locality.

Diseased colonies which have not been treated during the honey flow, or which are found to be diseased too late for treatment, might best be brimstoned, the contents properly

cared for; and the hives cleaned up for use another season.

I note that Doctor C. C. Miller has recently run foul of this foul disease and it is reported that he has had "lots of fun" in the treatment of same.

Would that we all might be as philosophical as he in such a misfortune.

P. S.—No Italian Queens for sale.

W. D. WRIGHT,
Altamont, N. Y.

The President—The next is "How to know American Foul Brood," by N. E. France of Wisconsin.

Mr. France—Mr. President, I may be somewhat partial in this, that American foul brood so widely spread has been the one thing as to which our bee-keepers have been alarmed. But, if I realize the seriousness of foul brood, either American or European, in connection with which I have been the Wisconsin Inspector, acting now this thirteenth year, I am ashamed to own that in my own State practical bee-keepers, who are keeping bees for a commercial consideration, pay little attention to the disease until it is in their own yard; don't know what it looks like, and before they are aware that it is there, through their management it has gone through a large part of the yard. I am asked, how near to my yard is there someone infected. That cuts but little figure, for with the various ways of exchange in which bee-keepers now-a-days are engaged, a far-distant State may be his nearest neighbor. We have had several cases of it brought into our State across a good many States. Every practical bee-keeper should know every symptom of the disease, and every time he has a hive open he must be on the watch for those symptoms. Never let it get a start, for with those who are producing extracted honey, especially, with the combs all going into the same extractor, and back into other hives again, the bee-keeper has been the means of repeatedly spreading it through his own yard. The loaning of the extractor or other implements has been the means. Even where they have called it bad luck, and the bees did not winter well, or died from other causes, not knowing that foul brood was the cause, and have loaned their extracting combs to some neigh-

bor, who might use them for a year or two to avoid the danger of their being destroyed by the bee moth. You can see what the ill-effect would be. So that I do find, after thirteen years of hard work in our State, many bee-keepers who today could not tell the American foul brood were it in their yard. In fact, I expect to get home some time early tomorrow, and the next morning leave for near Dr. Miller's neighborhood to inform some parties in regard to the disease in that locality. But, to be brief, do we know what the symptoms of American foul brood are when we see them? The sunken capping with a perforation in it is a fair indication from outside appearance, especially if those sunken cappings with holes in are irregular, more or less, all over the comb. There is also a little tendency towards a darker shade to those cappings, but at that age, where those cappings become sunken, if a toothpick or something similar is inserted into the dead larvae, and it draws out brown and ropy, with a foul odor, you need not question; that one characteristic sets it apart from the other diseases. It will continue to dry down until on the lower side wall of the comb, a little way back from the front end, will be noticed a little black dried down scale, not quite as thick as the side walls of the comb. In that condition it will remain almost indefinitely, but it is dangerous. In a crowded condition, in a swarm, the queen will deposit eggs in that same comb, or the bees put in pollen or honey, and in either case it is the medium for again spreading the disease. I question if the disease spreads as rapidly in that hive, where it begins as many have inferred. If there are but a few cells infected, I can't see how it would spread in that hive until those infected cells had had a medium for transmission, mostly by honey having been placed in that cell and then that used as food to feed the other larvae. So that there is in every hive, in the earlier stages, a larger per cent of the brood healthy. The more that becomes infected, the more rapidly it spreads, of course. At your convenience, at the noon hour, you can look at this sample which I took from a hive, where, a year and one month ago, I found four cells of American foul brood in the whole yard, in

that one hive. The man said, "Can't I cut those out?" "Yes," I says, "you can, but what is the effect?" I said, "Mister, if you have small pox, if you take off your undershirt, are you free of the disease?" It is thorough eradication, and nothing else. I said, take it all away; it is so easy to do now, with but one swarm in this yard affected. He said, "All right." I went on, and I say a little over a year after, I returned and expected to find a healthy yard. I found 24 swarms in the yard; 24 with every comb equal to this sample. Now, you see what it has done for him. In order to know that it was thoroughly cared for, as I had a date to keep some distance from there that evening, and not wanting to risk him any longer, I deputized man right there, a practicable bee-keeper, and who was at the mercy of being exposed to this yard; I appointed him as my deputy to immediately go at it that evening and eradicate the whole thing.

Now, to look into a comb, there are various ways to see this disease, but for me, I wouldn't want to look at a sample of foul brood by lamp light, and by daylight I want the light fairly strong, and I prefer to have it come from over my shoulder, rather than the reverse. Then hold the comb tilted sufficiently that the light will strike down into the cell nearly to the bottom, then I can see those little black dried down scales; look into the openings where the sunken capping are, and there see the brown ropy larvae. There are occasional cases in the last dying effort of that larvae that it throws out the tongue as a last effort of life, and wherever it strikes that ropy tendency it will stay attached, so that I quite frequently find combs where the tongue in the last effort has gone with force sufficient that it has struck the upper side wall, and it remains there, a tiny thread tacked down to the dried down larvae. I found several of them in this particular sample here. The peculiar odor has been described over and over again. I don't know that it is correct, it is something like glue when it becomes stale. Although there is a scent of tobacco from this cigar box in which I have this sample, if you will allow it to be closed for a moment, and on opening bring it close to your nose, you will get a scent of foul brood which I presume you will

not forget. Remember that one thing, if we have seen the disease, let us ever be on the watch for it. I don't think many bee-keepers in a commercial way would allow it to get very much of a headway, but, as I said at the beginning, I do find men who are readers of the American Bee Journal, Gleanings in Apiculture, the Bee-Keeper's Review, and keeping over 100 colonies of bees, who are indifferent until it gets into their own yards, and then they could work night and day, so it is that one thing, if any, that I want to caution you as to, know what it looks like, post yourself, and then be on the watch for it.

The President—The next paper is "The Practical Treatment of American and European Foul Brood" by Dr. E. F. Phillips, of Washington, D. C. Dr. Phillips is our representative from the Agricultural Department, Washington, and is sent here by the Department itself.

Dr. Phillips then read the following paper:

THE PRACTICAL TREATMENT OF AMERICAN AND EUROPEAN FOUL BROOD.

(By E. F. Phillips.)

The subject which has been assigned to me at this time is one of the most important now before American bee-keepers and, unfortunately, is not very well understood by anyone. Toward the end of devising proper treatment all investigations of the cause and characteristics of bee diseases must bend, if they are to be of any value to the practical bee-keeper. However much the bee-keeper may be interested in the bacteriological findings in a bee disease, these things are of less importance in his practical work but he wants and needs careful, reliable work on treatment.

The bacteriological investigations are very important but I shall not dwell on this point. It is perhaps enough to say that, until we know the cause of a disease and can make a detailed study of that cause, we cannot know just what we are fighting.

In finding methods of treatment, there are two possible ways to proceed. By repeated trials of various manipulations the practical bee-keeper may by chance hit on something which

enables him to save his property from destruction; he may make such a lucky find without any knowledge as to what has caused the disease. It was in this way that Schirach, in the eighteenth century, found the shaking treatment for foul brood and since then this same treatment has been used extensively. The Schirach treatment, or, as we now call it, the shaking treatment, enables us to prevent the brood diseases from destroying our bees and it certainly is satisfactory in the majority of cases.

The other way of investigating treatments is to find the cause of the disorder, study its characteristics and plan manipulation in the light of knowledge gained in that way. This method of procedure, while probably the more logical way, is open to the minority, but all can take the results obtained and utilize them without any great knowledge of bacteriological technique. But such work is slow. I fear that many bee-keepers wonder why the Bureau of Entomology is not able in a short time to make positive statements concerning the causes of disease, particularly European foul brood. To tell why would be a somewhat lengthy task; but let me simply point out that, in all diseases of animals so far studied, accurate results have been obtained only by years of work and no problem in bacteriology is an easy one. It took years to establish the cause of American foul brood and there is still much to learn. The bee-keeping public has been victimized by too many hasty workers who jump at results on insufficient data and we do not care to be in that class.

To illustrate the great desirability of first getting the cause, let me cite some recommended manipulations. Because carbolic acid is used quite generally as a disinfectant it has been repeatedly recommended that a 2 per cent to 5 per cent carbolic acid solution be used to disinfect hives in which infected colonies had lived. This was done without a knowledge of the cause of either disease and in the case of American foul brood of which we now know the cause it is certain that a 5 per cent carbolic acid solution will not destroy the spores of (*Bacillus larvae*) in the short time taken to wash out a hive. In the case of European foul brood, of which we do not yet know the cause, we are

unable to say whether the carbolic acid acts as a disinfectant or not.

In a similar manner without knowing the cause of either disease, various authors have recommended the feeding of carbolic acid, naphthol beta, salicylic acid and similar drugs in sugar syrup to diseased colonies. While, as suggested previously, it is possible to stumble on a method of treatment by promiscuous experimentation, we should not take these recommendations too seriously until more is known about the diseases. Such recommendations are largely confined to European authors for American bee-keepers, from sad experience, have learned to put little faith in these treatments.

It has also been recommended that various antiseptics be placed in the hive to ward off disease. One European writer, posing as the omniscient guide of the bee-keeping world, writes in a recent edition of one of his books as follows:

"There are certain antiseptics such as carbolic acid, phenyle or creolin, izal, eucalytus, camphor, naphthaline, etc., which evaporate at the ordinary temperature of the hive, and whose vapours, while not actually killing the bacilli, arrest their increase or growth."

When it is remembered that this is apparently recommended without any knowledge as to the cause of any brood disease, it will not be taken seriously. Surely no American bee-keeper would entertain any hope from such a treatment.

It is wise at times to cast up accounts to see where we stand. Let us look over the field of bee disease treatment to see what we know and do not know.

We know from the experience of hundreds of bee-keepers for years past, that the shaking treatment will enable the bee-keeper to keep either disease under control so that he can remain in the business and make money out of it, if the seasons permit. This treatment consists of removing all combs, honey, pollen and brood from the colony and putting the bees on foundation, compelling them to replace their comb, rear new brood and gather new stores. By this means the diseased material is removed and the contaminated honey and pollen which we consider as the carrying agents are

no longer available to feed to the brood. We do not know what becomes of bacteria which may be carried over in the honey in their honey stomachs or possibly even on the outside of their bodies. We do not know when it is safe to use full sheets of foundation and when we should use only starters. There are many other points variously surmised which are not yet settled and we must content ourselves with the fact that if a diseased colony is shaken from its combs to a clean hive on starters of foundation, the disease rarely reappears. Starters of foundation are here specified largely because reports would indicate a larger percentage of successes when they are used. If all worker comb is desired the bees may be given full sheets of foundation later.

We do not yet know just when or how it is best to shake in order to meet with the least financial loss and this is one point which must be thoroughly investigated. Ten frames of Langstroth size will probably contain, on an average, four pounds of wax and to shake the bees so that they will secrete this wax with the least consumption of time and stores is a problem of great importance. Probably a more important point is to devise a way by which the bee-keeper can get out of the combs all the wax in them. Our present methods of wax extraction are exceedingly crude and we are annually losing a great deal of wax by the use of the wax presses now commonly employed.

We do not know whether it is always necessary to disinfect the hive or not but to be on the safe side we should continue to do it until we know that it is not necessary. Since chemical disinfectants do not promise any results for American foul brood and since we do not know the cause of European foul brood, we can be sure of complete disinfection by burning out the hives. If this is done carefully, it does not injure the hive. In the field work of the Bureau of Entomology a blue flame torch such as is used in removing paints has been found very satisfactory.

We do not know of any antiseptic which can be fed in syrup or given in any other manner which will cure the disease. Neither do we know of any method by which combs can be disinfected by fumigation or otherwise to

insure success. Until careful bacteriological work has demonstrated the value of any such method it would be folly to put any reliance in it. Furthermore the experience of most American bee-keepers up to the present has shown that antiseptic feedings and fumigations which have been tried are not of the value attributed to them. It would therefore be unwise to recommend them.

The logical practical treatment for both of the diseases under discussion would, therefore, appear to be the shaking method. Until something better is devised, this is the only treatment which we can recommend. When our knowledge of the causes of the two diseases is more complete, it is to be hoped that we can find something better. It is also to be hoped that the present weak points in the shaking treatment may be strengthened by work which will give us information whereby we can decrease the expense of shaking. The main conclusion which we can draw from a study of treatment is that there is still much to learn.

So far I have discussed the subject of control from the standpoint of the individual bee-keeper. We have learned, however, that individual action is not enough and that co-operation and outside aid are essential points in a rational control of foul brood. Although this portion of the subject of disease work is not specifically assigned me, I shall ask your indulgence for a few moments longer on some phases of this problem which occur to me as a result of some recent experiments of the Bureau of Entomology.

The work of the various states in providing inspection of apiaries is of great value to the bee-keeping industry and an earnest effort should be made to have proper laws passed where they are needed. In several states such movements are now on foot. When such laws are passed, however, we cannot afford to believe that the problem is settled. It has only begun and the state inspector cannot be expected to do all that remains to be done.

The element of the work in controlling disease which will require the most labor is the educational feature. It is really remarkable after all that has been written how many bee-keepers do not know that there are any diseases of the bee.

The first step in this work is to learn just where the diseases exist. This phase of disease work has been neglected in this country and no concerted effort has been made to establish the necessary facts. During the summer just closing the Bureau of Entomology made a greater effort to locate diseases and in all we have examined nearly a thousand samples to get the data desired. We are not yet prepared to give our results. In doing this work we are compelled to make it a rule never to be sure whether disease exists in a given locality until a sample of diseased brood had been obtained. Furthermore, all samples were examined bacteriologically to be sure of no error in diagnosis. In the case of European foul brood this is particularly necessary for the symptoms are not constant enough to be sure of a sample after it has been away from the hive for a time. Many reports of disease turn out to be unreliable and this matter is too important for any suspicions to be accepted as facts. While the sending in of these samples by various persons interested is much appreciated, it has seemed rather strange that some men who were in a position to help us materially with this enormous task have not responded as we might have wished. There may be some bee-keepers who do not want it known that they have disease in their apiaries and, therefore, are opposed to work on distribution. It is no disgrace to have disease break out in an apiary; the only condition under which a bee-keeper may be considered remiss is when he does not treat his diseased colonies. Any man who hides disease and tries to give the impression that his bees are healthy when they are not is, to say the least, no friend to other bee-keepers. In some states he is legally worse than that.

After the distribution is learned the next step is to get in touch with every bee-keeper in the territory where diseases exist. This is not easy. During the past summer the Bureau of Entomology has sent out something over 10,000 circulars to postmasters, asking each one to give the names of bee-keepers in his vicinity. All of the returns have not yet been received but each report will probably average five names. The same plan could be used for a request from a government

department for all the post offices in the United States (over 60,000 in number), if necessary, but our very limited office force will not permit it. In some parts of the country we have been able to get extensive lists of bee-keepers from other sources.

After the names of the bee-keepers are received, the next step should be to send out a notice to each one living in a county where either disease exists, advising him of that fact and sending a circular on the subject so that he can become familiar with the symptoms and treatment of the disease. We have not been able as yet to do this in many cases but hope to continue the work in the future.

I have briefly outlined this scheme, not to advertise what the Bureau of Entomology aims to do nor to make elaborate promises but merely to indicate the fact that, if diseases are to be controlled it will take work to bring it about. To sit by and expect an inspection law to wipe out disease is not the part of wisdom. It has never done so yet.

Nor have I indicated all that must be done. I should be very much pleased, however, if by this outline I could induce each person interested to do his share for the furtherance of the industry. The Bureau of Entomology will continue to do what it can with the present limited funds, but it would be just as unwise to leave too much to us as it is to expect too much of an inspector.

Bureau of Entomology,
Washington, D. C.

The President—I doubt not that there is very much to be said upon this subject, and the Members will please bear in mind the recommendations of the Committee on Rules, that each member will speak but five minutes. The chair will endeavor not to be arbitrary, but that all should have a chance to talk in the limited time left to us, let us try to be as pointed in our remarks, and as precise in our statements as we can.

Dr. Bohrer—I have had some experience with this thing called foul brood, and it is a very sore experience, an experience I would not have undergone for \$500. I am not in bee-keeping for the purpose of selling either bees or a large amount of honey, nor queens, or anything of that kind; I have no ax to grind. I keep

bees for pastime and for what little I can learn, and for what I possibly might be able to teach others. Foul brood struck my apiary two years ago, and I have had a stubborn fight with it. The man who thinks he has got a walk over and can get rid of it easily when foul brood gets into his apiary is mistaken. I have read everything upon the subject I could find, and have been vigilant, and, as Dr. Phillips has said, we know so little about it that I have not got to the bottom of that treatment by any means. Legislation on this line is imperfect. None of our laws are perfect. The law should give the Inspector perfect and complete control, and not have to undertake to bluff anybody as I had to do in the County I live in. I drew up the first Bill, and it became a law, almost as drawn up, in our State. It provides for a County Inspector, and I think our County was one of the first to get an inspector appointed. We had foul brood there, and they wanted me to take the position, and I told them I didn't want to do it, I didn't feel physically able. We had a man appointed. The first man we tackled was a man handling bee supplies, and he declared he had no foul brood on his premises, and I knew he had. He said, you have injured me very greatly, and if you don't stop it I will prosecute you. I invited him to commence immediately, and I said, if you don't I will commence on you. I said, Here is the County Inspector, if you will allow him to go into your apiary he will show you you have got foul brood. In establishing the law the trouble was he didn't have authority to go there without calling on the County Sheriff or something of that kind. I believe a State Inspector should be clothed with authority similar to a Sheriff.

Now, as to the manner of diagnosing this disease, Mr. France has in part outlined it and given a pretty fair description. This thing of sticking a tooth pick into a cell and drawing it out tells something, but if there are many cells in a hive you will get an odor you will never forget; compared to the glue-pot scent it will beat that all hollow. In my case there were seven out of every ten cells in the hive that were infected, and it was a terrible odor that struck my nostrils.

I say that after having been a medical student and having gone through the dissecting rooms and done a good many things that were not as easy to do as they might have been; and it took about three days before I could eat a square meal after it. Then was when I said I would not have it in my little apiary for \$500; but a young man named Frank, who never had seen a case of foul brood, took some shares in that self same firm that kept a few bee supplies and sold colonies all over that country, and spread it all through his own apiary and mine. This thing of treating foul brood in the apiary where you find it I don't believe to be practical, or at least it is not as successful as if you took and closed the hive at night and took it off a mile or two and treated it. I treated one colony. Here were two colonies, and there were about six feet between the colonies on either side. I determined not to excite that colony, and I set them to filling themselves with honey. I opened the hive as quietly as possible, and slid it down off its own stand, after having prepared a hive with strips of foundation; I just took the top bar off some frames and fastened some strips on an inch wide. I made a brush of catnip, and with that I brushed the bees off, having a board there for them to run up on. I didn't want them to go to the other hives. If the disease was in the honey I knew the more honey they had the more they would carry with them. I brushed them off the combs as quickly as possible and put every comb of brood beyond the possible reach the bees, and took the hive off also. I closed the hive off in 48 hours, I took those strips of foundation away and gave them full sheets of comb, and went to feeding them a syrup composed of two parts of sugar and one of water. I fed them that way for probably two weeks. Just then the honey was not coming in rapidly. In about three weeks I examined the hive on the left to see whether any of the bees had crawled from that hive into any of the hives on either side. I knew those hives were free from it when I treated this one, but here I found it showing up in that locality. There is danger now of treating it in your apiary. I would advise every man if possible to close up his colony at night and take it.

clear beyond the reach of the bees and treat it in an isolated spot. I took every bit of clothing off that I wore and went and boiled my hive out, and I started up my gasoline stove and laid the hive in the heat of a burner, and then threw it into water to cool it. I took a teaspoonful of carbolic acid to a pint of water and washed my hands, and took my knife and scraped my nails and even shampooed my head. You will agree with me you cannot be too careful; the greater care you exercise the better.

Now, about disinfecting hives, it is nearly impossible to take ten frames out of a colony without getting a little on your fingers, and as like as not when you dip your fingers down you will rub a little honey off, hence the importance of disinfecting that hive, and I invariably go to work and pour two or three ounces of gasoline down in the bottom, light a piece of newspaper and drop it in there; put the lid on my hive, and after it has burned a fractional part of a minute—I let it char or burn that hive brown on the inside—I use boiling water, and the heat of that will reach every part in it. There are rabbits in the hive, and I have been in the habit of tearing them off fully, and lighting them separately, and letting them burn up the propolis completely. Mr. McEvoy of Canada does not do that; but when you get the honey in the hive the germs are there too, and you may breed 50 or 100 colonies and not get the disease in the hive in that way as described, and yet you may do it every time, hence the importance of adhering to the rule that Dr. Phillips recommends of disinfecting every hive that has foul brood in it. I heard this given as general treatment by Mr. Root at the first Convention held in the United States at the City of Indianapolis. He said: After trying all other remedies my advice is to dig a hole and as soon as it is night and the bees have all settled, wrap your infected hive up carefully, put it into the hole, cover it over with straw, and not burn it, but bury it if you can beyond the possibility of resurrection. I wouldn't do that now with a good hive. There are hundreds of thousands of box hives all over the country. If a hive is worth saving we can save it, and if the comb is not old and worthless we can save the bees-

wax. If it is an old worthless hive, and a weak colony, and the comb not worth much, I would say turn in and dig a pit, put some dry straw down in there, and after night set your colony in there and put coal oil on it and burn it all up, and then fill up the hole with dirt. Now, that kind of treatment I regard as radical, and it will cure every time.

Cleanse your implements after you use them, and either boil or burn a suit of clothing that you have used. As to this matter of shaking bees when they are in the height of the honey flow, you can't shake bees off your frame without shaking more or less honey out, and before that honey is all gone and evaporated and has disappeared the flies may take it all up, but if they do not the bee comes along and takes up some of that honey and you see what happens, the colony becomes infected at once, so that we want to cut off every avenue. I don't claim to know all about this by any means, and I feel I have scarcely learned the alphabet, and I would not have been at this Convention if it had not been for this subject which interests me above all others. I feel as though it needs the help of every man that is capable. I have said before this Association that I do not ever expect to make any money out of it, but it is just for pastime, and what I may be able to learn and teach others.

Mr. DeJong—This thing is new to me. We have a good deal of foul brood in our country. The best way I thought would be to take a board and put it on a new hive and set it out in the old place, and set the other hive on top of that; take your queen out and put her below on some comb foundation and let the bees work it out there. I thought in doing that twice the new hives would prevent them carrying any honey.

Dr. Bohrer—Tell us again.

Mr. DeJong—I suggested to our Inspector to take and set a new hive right on the place where the infected hive was, and then take a board and lay it on top of that, and set carefully your infected hive on top of that, and then take out your queen and put her below, and then the bees will go down there.

Dr. Bohrer—Have you treated it that way?

Mr. DeJong—No; it is too late now. We intended to go to work and treat them that way twice. In that way they would not carry the honey with them or make any mess or disturbance.

Dr. Bohrer—I tried that same plan only in a different way. It would be all right if no bees would get through that escape and return, but I had them do that, and they carried the disease. You may treat fifty colonies successfully, and you may not.

Mr. DeJong—Suppose the most of them go back, and the next morning you take that old hive off and close it up and set it away?

Dr. Bohrer—That will do.

Mr. DeJong—If you put any food down below, it seems to me it would be drawn down by the queen. Feed them down below. That I think is a better plan than shaking.

Dr. Bohrer—Try it and see.

Mr. De Jong—The Inspector has power of attorney to act; he has the right to enter any place and they cannot resist him. He has that power under our new law.

Mr. Huffman—I would like to ask Dr. Phillips if in the shaking process he would recommend full sheets of foundation or starters?

Dr. Phillips—As I stated in my paper, I recommend starters.

Dr. Bohrer—Take them away in two or three days and give them full sheets.

Dr. Phillips—It depends on the wishes of the individual bee-keepers, sometimes bees will build very nice frames of worker comb, and then we leave them. If they get too much drone comb we take that out and give them full sheets of foundation.

Mr. Goddard—We had two cases of infection in our apiary, and we did as the gentleman states, we put an empty hive with starters carefully under the old stand, lifted the old stand right up and slid the new hive under the honey board and Porter escape, and we let it stay there for three days before we took out the starters and put in new sheets of full foundation. We let it stay there till all the brood was hatched and let the brood go down, and kept water in the upper hive in a shallow pan. We have seen yet no signs of foul brood in the lower hive.

Dr. Bohrer—I believe that is right if the escape is all right.

Dr. Phillips—I don't like to condemn the use of a bee escape, because sometimes it is all right, but I think it is a safe statement to make, that in nine cases out of ten the bee escape is not the thing to use. Beekeepers all over this country that have been successful in the treatment of American and European foul brood have not used the bee escape treatment. There have been a few men who have made successful treatment with what is known as the Baldrige treatment. If there is anything in shaking energy into bees, we might as well get that benefit. I do not recommend the use of bee escapes. I think we can get better results in nine cases out of ten by shaping the bees on to starters or foundation, and I would not recommend anything else.

Mr. Syverud—I have tried the Baldrige plan, and I thought I was careful in every detail, but in every instance I found the bees would find a way up through either cracks or crevices in the hive, or get back through the escape and rob the diseased brood or honey, or both, and I have discarded that unless it is very slightly affected. What I like best is to use starters or full sheets, and use a dry extracting comb. The bees will store their diseased honey in there and you can remove it in 24 hours, and to be doubly sure, you can replace another dry comb and remove that in 24 or 48 hours, as you like. I think it will be successful.

Mr. Morgan—This method that has just been described is called the Chantry method and differs from the other in that we place it right on the centre of the hive and remove that the next morning after the shaking is done. To make that good, if this honey has not been all disgorged by the bees, a little feeding can be done, and in that way the bees will disgorge the honey that is contained in their systems into this dry comb and take up new honey and also disgorge that in the morning before they go out in the field to work. Then the second morning take out the dry comb and the work is complete, with full sheets of foundation. I have treated a good many this present season that way with perfect success. As Dr. Bohrer has stated, if we wait till we smell the disease, we have almost lost the colony. If we are not able to detect

that disease before it gets to a stage where we can smell it, we might as well say we will not get any surplus from that stock that season. We must be able to discover that disease as it appears in one or two cells, and get right to work. I would recommend that idea of having a yard two or three miles from the regular yard to treat this disease. I think it would pay everyone to move their bees for treatment—remove them at least two miles.

Dr. Phillips—I would like to say a word or two about the two maps that are put up on the blackboard. About a month ago I took the records of the samples of disease which have been received at the Bureau of Entomology from all over the United States, and charted them on maps. I do not claim by any means this represents the distribution of the two diseases in the United States; it simply shows where we have found it; and I would be very glad to get reports from persons here as to other localities in which the disease exists. The solid red colored Counties are those from which we have had samples, and those surrounded by a red border are those from which we have reports of samples. We do not take the report even from the best men in the United States as a positive thing until we get a sample. We would be very glad to know where to look for the disease in the future, in making this map complete.

Dr. Bohrer—From the external appearance you can't always tell the disease. This last spring I had a powerful colony in one of those Jumbo ten frame hives, and they had gone to work in the super and reached the capping stage, and all at once they ceased while other bees were energetically at work in bringing in honey. I saw them listlessly crawling about the entrance of the hive. I at once opened it and I found foul brood. When in the height of the honey flow you find them lazy in their habits and seeming to be cross, and so on, you may rest assured that there is something wrong and you must look for it immediately.

Mr. Syverud—I would be pleased to have someone describe the European foul brood.

Dr. Phillips—After Mr. France's description of the American, perhaps I can describe the European better by

pointing out the difference between the two. European foul brood attacks the larvae at an earlier age than does the American; the larvae are generally attacked while they are still curled around in the bottom of the cell, and the characteristic thing is the yellow color. The name "black brood" is not a good name; it does not describe the disease at all. If any name representing a color is to be given to this disease, it should be "yellow." We, however, have given it the name of European foul brood. The larvae turn yellow or somewhat grayish at the time while they are still curled up in the bottom of the cell before they straighten out. The larvae are occasionally attacked a little later and they may even come to the place where they are sealed, but a large majority of the brood is attacked before sealing, whereas in American foul brood the majority of it is attacked after sealing. There is no ropiness to amount to anything, and no odor such as we have in the American. There is sometimes a little sour odor connected with this brood, but it cannot be accepted as anything typical. The curled up position of the diseased larvae, and the yellow color I would take to be the chief characteristics of this disease. You can tell it is not pickled or chilled brood by the way in which it spreads in the colony. It simply goes through a colony like a plague. It spreads in a colony and in an apiary more rapidly than American foul brood. Another characteristic should be mentioned, and that is, in the fall of the year it often disappears of its own accord. That does not mean the disease is cured. While sometimes it will disappear and not re-appear, it generally comes back again.

Dr. Bohrer—Does not American foul brood do that sometimes?

Dr. Phillips—I only heard of but one or two cases where it did. When the American dries down it forms a scale, which Mr. France described. The scale adheres tightly to the side wall. In the European it remains loose, and a knife-blade run under it will lift the scale right up. The scale in European foul brood is not smooth and flat as it is in the American; it is rough as a rule.

Dr. Bohrer—I have thought a great deal about the matter of legislation, and I have thought a national law

prohibiting this thing of keeping diseased bees in any parts of the territories would be a good thing, and I don't know but this Body might be able to select a Legislative Committee that would be able to do something. But, whether they can or not, I believe it would be a good policy to have every State in the Union try to have a Legislative Committee, and try to get every bee-keeper to consider himself a committee of one, and consider it his duty to see his representative both in the House and Senate, and let that Legislative Committee agree as to what is important and almost indispensable in every State. By that means they will find out what you want. Having been a member twice of our State Legislature, I have learned something about the commodity of legislative bodies; if they know what you want and it is at all within reason, you are likely to get it. The matter of bee-keeping is less understood than any other by our Legislators. In Illinois they are having trouble, I don't know why or how it is; I know they have got one man there, a very contrary kind of man. I don't know what kind of halter you want to break him or handle him; but in Illinois you have got a lot of bee-keepers there, and you want to have a good, strong law. They are moving out of that State into other States where they don't know it, and they will take bees with them that have the disease. There is a pretty heavy penalty for taking the disease into the State of Kansas, but, innocently, not knowing what they are doing, it may be done. We are all alike interested in it, and want an effective law in every State. Let us go to work and labor for it.

Mr. Brown—There is a question I wanted to ask Dr. Phillips. Will naphthole beta kill the disease; and where it is fed to the bees at their watering place, a small amount put in the water, would it in any way control the spread of the disease?

Dr. Phillips—Personally, as far as we have gone in the matter of feeding antiseptics, I am not inclined to attribute any value whatever to any of those things. Naphthole beta, salicylic acid, carbolic acid, and all those things as I mentioned in my paper, have been recommended as antiseptics; but not only has the experience of American

bee-keepers shown the absolute uselessness of those things, but a more thorough and scientific investigation would indicate largely the same thing, that there is practically nothing to be hoped for in that way.

Mr. Ramer—I believe Dr. Phillips made the statement that we knew the origin of American foul brood, but he didn't define; I have a little curiosity to know how it originates.

Dr. Phillips—American foul brood is caused by a bacillus, bacillus larvae; the way that has been demonstrated is that the scale of American foul brood contains millions of spores. These spores have been taken and grown in pure cultures and run back to the bees, and the disease has been produced in that way, so that by the organisms fed to it and in this diseased material we again find the same organism. That is the course followed in determining the cause of American foul brood. That sounds, perhaps, easy enough, but it took Dr. White years to get anything on which this bacillus larvae would grow, and it was a long, tedious line of operation. We now know the organism that causes it, because we can produce it any time we care to artificially, by feeding these cultures. He is still at it, to try to find out what will kill it, and we announced some of these results at the Detroit meeting. The spores of this bacillus are very tenacious; a five per cent carbolic solution will not kill them for weeks, and it takes at least fifteen minutes of boiling to kill them. In various other ways, it is a very tenacious organism, and there is still a very great deal to learn. In regard to European foul brood, the cause has never been determined. We find a number of organisms present in this disease, and have good reason to think that one of them is the cause of it, but which one is the cause has never yet been determined.

Dr. Bohrer—What disposition do you find people making of the honey they extract from foul brood?

Dr. Phillips—They are putting it on the American market. I think it is safe to say 99 per cent are putting their honey on the market regardless of the law and public sentiment in the matter. I have seen it time and time again, where a man would have a goodly number of diseased colonies in his yard, and he would go and extract everything and put it all into cans, and

send it away. Of course, that is not the right thing to do, and it is contrary to law in a good many cases, but I have yet to find the inspector that will conscientiously prohibit that in every case he finds. I am not familiar with all of them, but I have travelled with some of them, and I have seen them wink at that sort of thing. I know there is too much contaminated honey being put on the market. The only safe thing to do is to destroy it or disinfect it by hard boiling. It can be disinfected by boiling with water for half an hour.

Mr. Darby—I want to say I believe that this contaminated honey is the means of spreading the bee disease throughout the United States more than any other one thing. I have good reason to believe that the honey being shipped from diseased apiaries has been responsible for the greater part of the trouble in the State of Missouri, and I think that this work of education along this line and various lines is one of the best things we can do towards the wiping out of bee diseases. You must get people to understand that they must do right themselves if they expect others to do right. This is a pretty hard matter. We find so many of them that count the dollars and cents first and then the principles of right and wrong after. We should seek to educate the bee-keepers in our community. Each individual bee-keeper should attempt to do this right at home; and not only must the bee-keepers be taught this, but you should talk it to your individual legislators, your doctors, lawyers and school teachers; everybody should be familiar with the bee industry to an extent that they should think it was right that we should have protection. I have had occasion to talk this way to many of our law makers and influential men in our State, and when they understand it once they will readily drop in with the idea and say, you should have protection; but if you don't educate them how can you expect them to give you assistance when it comes to asking the Legislators to hear you? In this work of education along the various lines I want to say we must learn to be careful in the smallest detail.

I was very much impressed yesterday afternoon by a few remarks Dr. Bohrer made in regard to handling

frames. I find so many bee men, and in other respects good bee men, who are careless about handling their frames when they go to look for bee disease or eggs or larvae; they will turn them flatways and look over this way, and you all know when new honey is coming in that it is so thin it will often drop out, and if you happen perchance to lift a comb out of a diseased colony, maybe you don't know the disease is there, and before you are aware of it you drop some of that honey on the ground, and by that means maybe have diseased a number of colonies in your apiary. Tell bee-keepers to hold the frames straight. Mr. France has told you here and elsewhere at Conventions to hold the frames straight. Then there is no danger of this diseased honey dropping out. It is the proper method any way of holding a frame. I don't like to speak harshly about it, but it shows the bee-keeper has not studied along some of the lines as much as he should, and I think we should discuss these little details so that we may get the bee-keepers to think about the little things as well as the large ones, because they all go to making up the sum total.

In the matter of disinfecting, there are so many bee-keepers that are careless in that respect like they are in some others. We find some people very careful, and we find some others that will make a mess of everything they undertake, and those kind of people should not be in the bee business; and if you leave the impression it is not necessary to disinfect hives or other things that they are using, they will take it for granted they are just as careful and clean as anybody in their work and it is not necessary for them to disinfect. I make it a rule to say to people throughout the country, when they are treating diseased colonies, to disinfect those hives. It doesn't take but a minute to paint the inside of the hive with gasoline or kerosene and touch a flame to it, and in a very few minutes' time this work has been done, and if a few drops of honey have been accidentally dropped there, then you have done the work. So, do your work thoroughly. I know with a careful man, and a man that has been working with bees for years, he may get along all right without any of this

work of disinfecting, but when we are talking about this we must remember we are talking to people all over the United States. While they may not be here today to hear us, and even though they may not be members of the Association, they may in some way get hold of these reports, and we should make ourselves understood so that these people will carry out the work thoroughly.

Mr. France—Mr. President, the care of honey from infected hives has been one of the greatest hobbies of my work in our State. About five or six weeks ago I received notice that a whole apiary was to be moved from Wisconsin to Iowa, and that there was infection in that yard. I wasn't aware of it. I went there and found infection, and in order to hold the man I put a printed quarantine card upon the yard, and I said, You dare not move one thing; it must be treated right here; but he said I am away from home at expense and I can't afford to stay. I said, "Sir, if you are sick with the smallpox you will stay. This is not smallpox, but to the bees it is equal to it." He had four colonies of bees all ready for shipment and they never left the City. The honey was extracted from those combs with the understanding that it should all be used as a food consumption in two families who knew what they were using, and that the dishes or cans in which it came were at my mercy, and they were disposed of. Infected honey I have not been able to say positively is injurious to human health. I can't for one moment recommend it. I have used some of that honey purposely from some badly infected combs myself, and I fancy I have received some ill-effects temporarily. One man in one County extracted honey where the brown rosy matter was in some combs and went into the honey visible to the eye, and that honey he himself used, and his family, and he is still living and in good health. To go back to the point of what we are going to allow with regard to this honey, in two cases where they had considerable of this infected honey I allowed them to ship the honey to bakers, marking the barrels and notifying them that it was infected honey and that those barrels must be burned. Otherwise I have not allowed anyone, where I have

known of infected honey in the State, to do anything with that honey than either totally destroy it or boil it, and afterwards it is not of any value because if you boil it enough you have blackened your honey till there is no commercial value in it.

Mr. Ramer—Would it do to feed to the bees again after boiling?

Mr. France—Don't take the chance. I believe it is possible that that honey can be boiled and used again from the fact that I made a desperate effort twelve years ago this year to save everything in a yard of 200 and some odd infected colonies. We took the hives, cleansed them, and put the bees back into the same hives, extracted the honey and boiled it, and, having a foundation outfit on the farm, we made some infected wax into comb foundation, put the bees on to that and fed them with boiled, infected honey. That is twelve years ago, and no disease has shown up since, but I wouldn't want that to become a general public statement, from the fact that anyone else might not be as thorough. We boiled that honey to a finish. I have seen honey that has been called boiled in which the germs of the disease were plenty and alive. There have been in my State and adjoining States, not giving names, nine instances where honey from an unknown source has been used as a means of feeding bees for winter stores, and in those cases it has brought the disease to their yard. Do not for one moment buy honey to feed to your bees unless you positively know the source it comes from. Sugar syrup is better than to take those chances.

Dr. Bohrer—I have some at home canned up, but I won't sell it; I am too good a Christian to sell it; I would as soon go into my neighbor's barn and steal his horses. As to extracting it when it reaches the stage Mr. France has spoken of, that is with a large number of diseases larvae, and decomposed and rosy, I never extracted any honey from a frame of that kind. I simply take the frames that have no brood in them and simply extract the honey from them. If I use that at all I use it on my own table in the winter time. Where Mr. Poppleton lives he had better not use it at all, because he lives in a warmer climate and bees get out every day in the year and they may

get at that honey. You don't want to take any chances. If you can't use it during the cold winter weather it is better to dig a hole and bury it.

Mr. York presented the report to the Nomination Committee as follows:

Report of Nomination Committee.

N. E. France elected Chairman of the committee, and George W. York Secretary.

Nominations:

President—George W. York, Chicago, Ill.; Thos. Chantry, Price, Utah.

Vice-President—W. D. Wright, Altamont, N. Y.; G. M. Bentley, Knoxville, Tenn.

Secretary—Morley Pettit, Jordan Station, Ont., Canada; Louis H. Scholl, New Braunfels, Texas.

Gen. Mgr. and Treas.—N. E. France, Platteville, Wis.

Three Directors—J. E. Crane, Middlebury, Va.; J. J. Wilder, Cordele, Ga.; R. A. Morgan, Vermilion, S. Dakota; Edw. G. Brown, Sargent's Bluff, Iowa; B. A. Hadsell, Buckeye, Ariz.; E. F. Atwater, Meridian, Idaho.

(Signed)

GEORGE W. YORK,

Secretary.

For Com. from 11 States.

Sioux City, Iowa, Sept. 23, 1909.

On motion of Dr. Bohrer, seconded by Mr. Goddard, the report was received and adopted.

On motion, the convention stood adjourned until 1:30 p. m.

AFTERNOON SESSION.

At 1:30 p. m., the President took the chair and said: The convention will please come to order. I apprehend the majority of the members have gone to the Fair or something. We will take up the subjects, however, and dispose of them according to the program. The first upon the list is "How to Get Big Honey Harvests Without Swarming," by A. C. Allen, of Portage, Wis.

Mr. France—Mr. President, that is one of the papers which, as yet, has not arrived. Possibly I might outline briefly the method by which Mr. Allen conducts this way of handling bees, so that we may have some of the benefits of it this season. However, I will see that the paper becomes a part of the Annual Report, although it has failed to reach here. In short, it is simply this, working for extract-

ed honey to gather all the products and not have swarming. As soon as the bees are out of the cellar in the spring, weather permitting, stimulative feeding to encourage more brood rearing. As soon as the first hive body or brood-chamber is well equipped with brood, taking a portion of that brood into another hive body, placing it above this one, and continuing, so that by the time the white clover harvest comes you have two hive bodies nearly solid, full of brood. That is a big swarm. It is the big swarms that we realize our returns from. The swarming fever would soon take place under those conditions when the harvest opens. To get the harvest and have no swarming just at this time when queen cells would begin to be formed, he raises that entire double hive body up, putting another hive body under with a queen-excluder between; in this lower hive comb foundation and some drawn combs, if he has them, giving thereby the queen an empty division to work in, and as the brood above hatches, you still have all the working force of that big swarm. That gives you room for the storage of honey as fast as it comes in, and if need be then you can add your other super for more honey. In doing that, those combs are filled, and there is no necessity for being in a hurry to extract your honey before it is ripened. There is no shaking energy into the bees, if you please; it is giving lots of room, and at the same time no swarming. Mr. Allen has out-apiaries, and without hired help is enabled that way to work those yards without any swarming whatever, and get good, big returns. I have been at his yard several times, and he has nearly double per colony the yield that his neighbor bee-keepers have.

HOW TO SECURE THE HONEY HARVEST WITHOUT SWARMING.

(By A. C. Allen.)

During the past fifty or more years the attention of all large honey producers has been turned toward devising some means of absolute control of swarming; and at the same time not detract the amount of honey that a colony would gather, did it not contract the desire to swarm. For all we know that honey gathering is

effected to a greater or less extent where the swarming fever exists. This subject has been discussed at length in nearly all conventions; nearly every issue of our bee journals contain something new which, grasped at and tried by many, only to find it a failure. Various styles of hives have been constructed and tried with like result. The writer has also been studying this matter clearly for the past ten years, and not until the summer of 1906 did success crown my efforts. Most apiarists who have given this the most thought have gone at it by studying the CAUSE OF SWARMING; but I cared little about that so long as I could prevent it; therefore, went after it in a different way, for to be successful, I wish every colony to get so strong that it will want to swarm; therefore I STUDIED THOSE THINGS THAT SATISFY DESIRE and thereby fulfill the laws and demands of nature.

The plan I now give to the world has been used in my apiaries three seasons without one case of failure; does not in any way detract from the strength of the colony or amount of nectar gathered, but rather increases both. A colony can be treated by the expert or novice alike in ten minutes time or less; and he can rest assured that his bees will not swarm for that season; and the plan is so simple that I often wonder that it was not discovered before.

THE PLAN.

The first requisite of success is in having a young and vigorous queen in each colony when they go into winter quarters and at least thirty pounds of good stores which will keep them until fruit bloom the following spring. At this time each good colony should be strong enough to take a super of extracting combs which is put on without an excluder, thus allowing the queen free access to both stories. From this time on until the clover flow starts each colony is fed twice a week one quart of warm syrup at evenings. The abundance of feed which the colonies had when spring opened and the feeding after fruit bloom, has resulted in the queen doing their best at egg laying, and when the clover flow starts the hives are literally full of bees just anxious to go to work. With me the honey flow

usually starts from nothing, to good business in two to four days, the pasturage being such that the profusions of blossoms open at once. Just at this junction I apply the treatment which causes the queen to continue laying just as vigorously as before and get a supply of bees ready for the fall flow, rather than almost stop laying as is the case if left to themselves. I go to a colony and remove it from its stand putting in its place a hive full of empty combs less a center one. Next a comb containing a patch of unsealed brood about as large as my hand is selected from the colony and placed in the vacant space in the new hive. A queen excluder is put on this lower story and above this a super of drone comb and on top of all an empty super. The bees and queen are then shaken in front of the new hive onto a cloth which has been placed in such a position that the bees can easily crawl into this new home, and the top supers filled with combs full of brood, which is left there to hatch and reinforce the colony. Thus the swarming fever is satisfied, the colony is stimulated to do its utmost in honey gathering and the queen encouraged to lay anew.

In another hour the bees are at work and there is no sulking.

The whole colony is kept together and as the brood hatches the bees fill the combs with honey and usually before the flow closes I have to put a third super on, so the hive is four stories high.

If I happen to notice the queen on one of the first combs taken out I see that she goes at once into the lower story and no more shaking is done, simply putting the brood in the top story, thus shortening the job.

Nearly every colony which is strong enough to treat in this manner has more combs of brood than will go in this super and the surplus is used to strengthen any weak colonies that may be found. Why do I use drone comb in the second story? For two reasons: I bought an apiary having a lot of these combs and this is a good place to put them,—and because the bees store honey faster and get more of it into a super of drone comb than in a super of worked combs; so I really like them for this particular place though I would not now produce them for it. If increase is desired, nine to twelve days after thus placing

the brood on top, it is removed to a new stand and a ripe queen cell or queen given, and by the time the fall flow comes these new colonies are usually ready for a super. When a laying queen is given a super of fall honey is often secured and when a cell or virgin is given the colony often secures its winter stores. This is the first season that I removed the brood for increase and to ascertain whether this detracted from the amount of honey secured for extracting I weighed the honey taken from each hive separately. Those from which brood was taken, stored just as much clover honey as those in which the brood was left to hatch and return to the parent colony. The only way I can account for this is that those bees do not become old enough for field workers on clover, but they did store a little more fall honey than those from which brood was taken, but not as much as the two divided colonies did; so the making of increase would be gain, even if the bees were again united after the season ended. When first using this plan to control swarming, fears were entertained that so much honey would be stored in the brood chamber that not as much would be realized from the surplus apartments, and I used dummies in the brood chamber for two weeks after shaking, giving the colony only six combs, but I found this unnecessary in the case of eight frame hives; as at the close of the white honey flow there are five to seven combs filled with brood. With ten frame hives one dummy is still used on each side, being removed after the flow and replaced with empty combs which are filled with honey for winter stores. When queens are thus forced they are used only two seasons. Although I think as Mr. Doolittle did about his comb honey plan, that this is head and shoulders above anything ever given for the production of extracted honey.

The President—I am sure our Manager has given us a nice outline indeed, which will enable us to discuss the paper without it being here.

Mr. Huffman—Mr. President, I would like to know is it the eight or ten-frame hive he uses?

Mr. France—The majority of them are eight-frame in the out-yard. The

home yard is all ten-frame. He has tried very much the same method for comb honey production and finds it works very well for that.

Mr. Lawrence—I would like to ask when he puts the excluder on that bottom story what he does with the drones that hatch out above?

Mr. France—For about three days the entrance to the upper one is left open, that allows the drones to come down, but it won't do to keep that open, for the young bees would learn their way in and out there. Within those three days those drones have found their way out; the balance of them would have to stay up there till he opens the hive for further consideration.

Dr. Darby—I would like to ask what he does with the queen cells that may be constructed up there afterwards?

Mr. France—There is very little tendency for those queen cells from the fact that the queen's new brood is all away below. You have so isolated it. Putting her below and the new brood all below, the tendency is to form those new queens where there is young brood. Sometimes he has had a queen hatched above, so that there would be a plurality queen in that hive, one above and one below, and he has allowed the two to remain, but Nature seems to provide for one queen in a hive, and in time when that excluder is taken out they equalize that by the survival of the fittest.

Mr. Darby—If those queens were confined there they would in course of time become drone layers, having had no opportunity to get out, and if something is not done you may have your whole colony manned by the droning queen.

Mr. France—He is going through those hives fast enough so that his first turn around extracting would come in the neighborhood of twelve to fifteen days after making the change, and at a glance he could see whether the chamber where the brood was was in proper condition or not.

Mr. Darby—If a system of this kind could be managed on somewhat of the let-alone plan, how would that work?

Mr. DeJong—I have tried that let-alone plan once, and I don't see how they did it, but they had a queen up in the super, and she was a drone layer, and when I came in to extract I

said, They must have it full by this time. I saw what she had done, and I naturally sliced their heads off and put them back in there, and they carried them through the queen excluder down through the hive and when I came back two weeks later it was all full of honey.

Dr. Bohrer—Mr. France struck the key-note when he said, Keep the young brood all down below. If you do that you won't have to bother with queen cells above. The least drone comb you have the least trouble you will have with drones either below or above. I find that there is a disposition on the part of queens when there is drone comb in the top of the hive, to slip up there and fill it with eggs. Dr. Miller, I believe, has taken the position that probably the queen gets tired of laying worker eggs. It is supposed by some it requires an effort on the part of the queen to fertilize that egg. I would say: Have just as little drone comb about your apiary as possible; three or four inches square is plenty. With that kind of manipulation I have some very large hives, and I have tested that more effectually. I have 14-frame hives, and it takes a powerful colony to fill a 14-frame hive. I take out some combs for fear they will swarm, when it is pretty well capped over, and go and hive them in the upper story of a hive that is not so strong. The bees will take better care of it than I can anywhere else. Put in an empty comb for them to fill up, or a sheet of foundation, and let them have that, and I believe, in that way, you can manage a large swarm of bees and have no swarming. They won't always swarm in big hives when you allow them to develop queen cells. The mother and daughter will live on terms of peace, both laying eggs for a term of weeks. Mr. Alexander tried to make that effectual, but he was trying to do something he couldn't do.

The President—The next paper is "The Saving of Wax," by E. G. Brown, of Sergeant Bluff, Iowa.

Mr. Brown presented his paper as follows:

"THE SAVING OF WAX."

Wax is a secretion from the glands of the abdomen of the bee, and, while its production is largely voluntary, it

requires the consumption of a large quantity of honey to produce it. Various estimates range from six to sixteen pounds of honey being required to produce a pound of wax. The large amount of honey consumed in its production, combined with its varied uses, makes it one of the valuable products of the apiary. It is used in many places where no other materials can be substituted. For apicultural purposes there can be no substitute, and many of the large cathedrals use it exclusively for candles, as other wax or lighting material cause a sediment to accumulate on oil paintings, which is very injurious to their beauty and durability, and wax also burns with a much steadier and clearer light.

It is also used extensively for dental and medical purposes, and in shoe polish and floor wax, and in polishing fine woodwork and stone.

It has nearly a steady market, at a price of about 30 cents per pound, and if a bee-keeper is careful of his scraps of comb and hive scrapings, he will find it will accumulate very rapidly.

The cappings from extracted honey are, perhaps, the greatest source of production, as they are nearly pure wax, and, when carefully rendered, produce the purest and best quality of wax. Old combs that for one reason or another have become undesirable for further use and patches of drone comb cut from the corners of the regular brood comb furnish a large amount of wax.

Ten Langstroth frames will, when properly rendered, produce from two and a half to three and a half pounds of wax, or equal to 20 or 25 full sheets of medium brood foundation, and a chemical analysis would show there ought to be nearly four pounds. For this reason, there is no economy in using old, crooked or broken combs, and it will generally be found advisable to change one's supply of combs every eight to ten years, discarding one out of every eight or ten every year, as the wax will pay for the rendering and the new foundation, and he will be able to produce a better, clearer grade of honey, and, in an infected locality, will be less subject to disease.

Another source of accumulation is from the scrapings from the hives and frames, as the bees almost always seem to have a little extra wax

on hand to tuck away in the corners, or on top of the frames, or between them, in the form of burr combs.

In the spring, when the bees are using large quantities of sealed honey, they seem to want a place to store the extra wax from the cappings, and, for this reason, pile it on top of the frames, or build burr combs between them, and unless these are kept scraped off they generally cause some trouble in handling the combs and, if left until the honey flow comes on, a large amount of it will probably find its way into the super and cause dark, inferior looking cappings where comb honey is produced.

The simplest method of rendering is the sun melter, and while this produces the best quality it does not get nearly all the wax, as it obtains just the free wax that will drain out of the scrapings and old combs, yet I believe every bee-keeper should have one of these in his yard as a catch-all for scraps and bits of comb, and if he is a little careful he can, in a short time, accumulate many times over the cost of the melter in wax saved in this manner. This form of rendering is by far the most practical for the small bee-keeper, and then by saving his slumgum for a year or so he will accumulate enough of this to either sell or render in some other way. But be sure to keep it dry.

The most complete and about the only way to render large quantities of old comb and slumgum is by means of hot water or steam. In order to get the wax entirely out of the melted slumgum it is necessary to have a steady, hard pressure, and essential that the press cake or slumgum be thoroughly melted and kept at a high temperature during the entire operation. Where the press is arranged so that the slumgum is submerged below boiling water while pressing, it is best to apply the pressure as hard as possible and then release and allow the slumgum to boil up again and then press again.

The only material that will give any satisfaction for press sacks is common burlap, and in order to have them stand the necessary pressure they should be very heavy and strong. If too closely woven a material is used the wax cannot be forced out, as the slumgum cakes in next to the cloth,

and even the best burlap clogs very rapidly.

One of the most rapid ways of rendering wax in large quantities is to use a hot water tank heated by a steam pressure, and using a steam heat under the press cake. The great drawback to this plan is the expense, which would place it beyond the means of a man who did not have a large quantity of wax to render and also other use for his steam power.

The capping melter, while it produces the best possible quality of wax, is not practical because of the inability to apply sufficient heat to melt the wax and not darken the honey.

Be sure that all wax stuff—that is, scraps of old comb, cappings, scrapings and solar melter slumgum—are kept dry, as there is nothing that will mould quicker than this material when once it gets damp, and it takes very little mould to make dark wax out of the best material.

Black iron should always be avoided for melting apparatus as it will also color wax. Copper is considered the best material for a melting tank, although tin or galvanized iron are both good and are much cheaper.

Care should always be taken to see that wax is thoroughly strained and settled, and, to accomplish the latter, it should be cooled very slowly, and there should be some water in the bottom of the container.

It never pays to put an inferior or dirty grade of goods on the market, as it will not bring the price, and also leaves a bad impression with the dealer who buys.

BUT DON'T save wax by scrimping on the use of foundation, because for every cent you save in the cost of foundation you lose ten in the amount of honey secured and frequently twice that in crooked combs and inferior sections.

Mr. Brown—I was talking with Dr. Phillips and he says that there is another plan that will produce nearly four pounds of wax to every ten Langstroth frames, but he said that had not been developed in a way that it could be used and it is a new invention. The best results I have ever been able to get were about three and a half pounds of wax out of good Langstroth frames. I can get more wax out of heavy old combs where there are corners plugged

in with old comb and where there are a number of sub-queen cells built on; those will accumulate more wax, so that an old frame generally yields a larger amount of wax than a new one, especially one that has been used in the brood nest about two years.

Dr. Phillips—It seems to me that this matter of wax production is a very important subject. It is almost part of our discussion this morning in the matter of foul brood control, because in order to reduce the expense of the disease treatment, we want to get all we can from the material taken away from the bees, and every ounce of wax in a healthy colony decreases the expense of the treatment just that much. It is, of course, important for the man who has no disease, because he has a great deal of comb to render at various times.

I have never been satisfied with the wax-press method of wax extraction; it has always seemed to me a slow process. I have nothing much better to offer as far as I myself am concerned. In the first place, I don't like to put the combs themselves into an ordinary wax-press. In our work we always melt the combs down in a double boiler and let all the wax that will come off first, and then press the slumgum. It makes a great deal shorter operation of it where it is possible to get a double boiler, which is not very expensive. The other method to which Mr. Brown has referred is a method being developed by some bee-keepers in the Hawaiian Islands; they don't use any pressure or press at all, but the slumgum is ground all to pieces, and when it comes out it is almost a powder, and when it is put in the fire it does not crackle. In an operation where they took 120 colonies in an apiary and rendered the wax from all the surplus combs, some used for brood and some not, they got 4 4-10 pounds of beeswax to every ten frames of Langstroth size.

Dr. Bohrer—I am glad Dr. Phillips made mention of that matter. I have no wax-press, no machine of any kind; do not handle bees enough to justify me in buying one of those expensive wax-presses, and I don't believe they can get very much wax out of the comb by the time I get through with it. In order to shut the bees off from it, I put it all in a gunnysack

and put it down in a dark cave, and then I take about a 30-gallon sugar kettle; I get the water boiling in it, and dump the sack in it, and in half a minute it is melted down. I boil that probably for an hour before I begin to skim off any. Then I skim it off the top with a dipper, and then pour it into something like a large dishpan, and keep boiling and skimming. I did this in one case, and the water began to look pretty muddy for a while, and I took the sack out and then put on another kettle and heated that up and boiled the same sack over again, and kept skimming as long as I could get anything in the shape of wax off, and poured it into a basin of water. Then I melted it again and poured it off into a cooler, and then I turned in and built a fire in the kettle and burned it out, because the wax may get up around the top, and it may be you have not destroyed all the germs. I didn't get just the whitest kind of wax, and I thought of what was made mention of by Mr. Dadant, and that is, not melting the wax or rendering it out in one of those solar extractors. I did not want to use one of them, because I was afraid of that, where there is any foul brood about. After you have boiled that way, I don't believe you would get four ounces out of it. After it had lain there a while, I built a fire there, and it burned up and it didn't seem to indicate there was any gelatinous substance in it.

Mr. Brown.—I would like to make some comment about that plan of churning the wax. When I fixed my melting apparatus first, I thought I had it so that I was going to put it in the frames and boil it up, and fix it so as to churn it up and down and get the wax out of it there, but it wouldn't work for me; I didn't get over a pound and a half to a ten-frame hive of that wax, and mostly all the slumgum had gotten to a point where it had settled. The weight of the slumgum was heavier than the wax, and it would settle in the bottom of the tank. I wasn't satisfied, and I ran the slumgum into my press and, while it looked as though there was nothing else in it, I pressed it out, and I got more wax than I skimmed out before.

Mr. Hall—Mr. President, I thought I hadn't anything to say, but after Dr.

Bohrer began to talk, I see that his method of rendering wax has been almost identical with my method. During the last two or three years I have talked with a few who have had wax presses, and I began to think I ought to have a wax press, and I ordered one to be built for me for this fall's use. I don't know whether it has been built or not. The only difference particularly between Dr. Bohrer's method and mine was, he said he put his dry combs into hot water. My method has been to put the combs, all broken up as finely as I could break them, into a barrel and keep it under water, sometimes a week or two weeks and frequently as long as three weeks, and pour the water off occasionally, and it would be as black as ink, especially these old combs, and my way was to soak up the cocoons with water so that they couldn't absorb any of the wax and in that way cause the wax to rise to the top of the water in place of being absorbed in the cocoons.

Dr. Bohrer—You wouldn't do that with foul brood combs.

Mr. Hall—I had no foul brood combs, thank goodness. What difference it would make I don't know except the water that would drain off would have to be dumped in a place where it would be impossible for the bees to get to it.

Mr. Darby—I just wanted to add a few words to what Dr. Phillips said in reference to this method of wax rendering. I have heard these discussions at different times and they nearly always end pretty much in the same old way. I realize the fact that our methods of rendering wax are too slow, as the Doctor has said. I don't like to spend five dollars' worth of time getting \$2.50 worth of wax, and then it is a mussy, unsatisfactory thing anyway, and I think in these discussions these agitations should stimulate someone to work out a better and more speedy plan.

Mr. Ramer—I have had a little experience in melting up wax the last few years. I have tried the wax press and the solar wax extractor and I never got much satisfaction out of that, but I believe that the simplest and cheapest method that I have lit upon is this—I think I got it from A. B. C.—to take an old boiler and make a couple of pieces of slat work, one to lay in the bottom and the other on top of the sack—take a coarse sack. I never

bother with my wax; as I get little bits I squeeze them up in a bunch; with an old comb that has been taken off the hives, squeeze it in a bunch and throw it in the sack. I tried the method of soaking once, but I don't think that amounts to anything. I put it in the boiler, and it will soon boil all to pieces, and then I take something like a churn-dasher and churn that good, and work it and skim it off; and if you don't fill the sack too full, you can take hold of the end of that sack with something and get your wax all into a little bunch and work it, press it and churn it out. That way I have worked out at the rate of about six pounds an hour, and I think I got nearly all of the wax, and the process is cheap and not a long one. That is the way I have proceeded to take out all my wax in the last two or three years.

Mr. France—Just one word on this wax business. With the solar wax extractor, slumgum, if from a diseased apiary, is full of the disease, and if thrown out will spread the disease galore so that if you use the solar extractor beware of the product. I have had several instances in our State where the melting of diseased material has been the source of neighbor's bees coming there and getting the disease.

Dr. Bohrer—I advise burning it up.

Mr. France—As Dr. Phillips says, All our wax presses are, with me, too slow. I have used the Hatch-Germell Press, the German Press and the Hershisier. As I have gone over our State, but few bee-keepers are equipped at their home with a press suitable, while I am there a short time, to render up the wax, so I have taken with me as baggage, a press, and in nearly every instance I have used what is common on nearly all farms, a large iron kettle to do the melting in, using an abundance of water. Just as quick as the wax is melted I get it out of that kettle; I don't want to boil it as long as the Doctor was speaking about here, from the fact you remember Mr. Dadant called our attention to the effect of over-boiling in making the wax more like cornmeal. I then take a long-handled dipper and put this melted wax and slumgum into the wax press first, however, to have that tempered up right. I then use the press as a press to get the wax out of the slumgum

under hot water. In that way it is not a difficult matter for one person to run, say, a thousand to fifteen hundred combs through in a day, having some receptacles that you can cool the wax in. I see someone has brought here and left at the desk some samples of wax. There is a difference in the shade of those two samples, and the more iron there is, the darker the shade. Don't leave the wax in iron longer than you are obliged to, and by all means let it cool in wood, tin or copper. My preference would be bright tin, and wherever it cools, that receptacle should have considerable hot water below the wax, and the entire can, or whatever it is that the wax cools in, should be enclosed so as to be a long time cooling.

A few years ago, when I was up in Mr. Dadant's foundation factory, in their melting building, the wax that was melted was run into deep, long cans perhaps half full of boiling water; those were run into a little cupboard and enclosed; in the inside there was liquid wax in abundance, yet in that can it would take from 24 to 36 hours before that wax would be into the form of a cake and the foreign material had settled out of it. As far as acid is concerned to purify the wax, we, as bee-keepers, had better let that part alone, for the majority of us are not equipped. For comb foundation, men of experience have learned how much to use, and can use a little of it in the final melting.

Mr. Brown—One of those samples of wax, bright yellow, is from cappings that have never been in water, but the cappings were melted; and the other one is from scrapings that were over half or two-thirds propolis. The lighter colored one is from propolis, and if you notice in the smell, you will notice there is a large smell of propolis on that one cake. I noticed here a short time ago a statement that where propolis was mixed with wax it would not work for polishing purposes, and, also, if you broke a cake of wax from cappings or clear combs you could put your finger on it and rub it around, and it would shine. Take a cake where there is propolis, and you can't do it.

Mr. Morgan—I would like to ask Dr. Phillips, or anyone who knows, if

wax made in the solar extractor is superior in any way to water rendered wax? I have heard it was, and that it was worth from five to ten cents a pound more than the water rendered wax.

Dr. Bohrer—It is if it is purified. That is, white wax is used for making ointments. They refine it. You can take a solar extractor and run it through that as many times as you like, and get a piece of galvanized iron and get your tinner to turn the edges up at the bottom, and run it to a point, and set a basin under that with water in it, and put a pane of glass over that, and put your wax in it, and put it out in the hot sun, and the oftener you run it through, the whiter it will get.

Dr. Phillips—The rendering of the white wax of commerce is not done under glass. The way the wax manufacturers take care of that is to cut it up into very fine shavings, and put it out in the sun on trays and leave it till it is perfectly white. I do not think that wax from the solar wax extractor will bring a very much bigger price than the others in the market, because the men who have to buy the wax have to take care of it and fix it up for their own use; and in making it up for floor polish or medicinal purposes, or candles, it all has to be re-treated anyway.

Mr. DeJong—I spoke to Mr. Dadant about that point yesterday, and he said that was all nothing, it is all the same; he said that there was no difference. This is what Mr. Morgan speaks of. A man from the Black Hills said that he melted his comb right in the kettles dry, and his wax was worth seven to eight cents a pound more than the other wax melted in hot water.

Mr. Poppleton—In one way the wax of the solar wax extractor is better than other wax; in the solar wax extractor it remains from two to three hours settling there, and that will always clarify it better than in any other way. Mr. Dadant has advanced the idea of slow melting helping the wax. It is not in the slow melting, it is in keeping it melted a long time. In the solar wax extractor it is kept so, and the wax from that, if it can be properly handled, is almost always clear from other material. I presume I have used the solar wax extractor

probably more than any other bee-keeper in the United States. I use it altogether. I ran through 500 pounds this year. I have used it for over thirty years steadily. I have yet to have the pleasure of dealing with foul brood, consequently that question has not entered into my calculations at all.

The President—"The National Bee-Keepers' Association," by N. E. France, General Manager, of Platteville, Wis., is the next and last subject upon the program.

Mr. France—To begin with I would say that the locomotive ahead is the power of the train, and to quite an extent the Association members are willing that the Manager shall be the locomotive, they following behind.

The President—Or staying at home.

Mr. France—And for the benefit of some who have been here, I would like to say we had the pleasure of a surprise at noon hour today to see the first manager, as the locomotive, Mr. Secor, and have dinner with him, and I will ask Mr. Secor to rise that you may see him; he is one of our past masters, and those of us who have the Annual Reports know, from the reports he gave, of the work he had to do and some of it at a time when our Association and its funds were rather light. The membership is growing very nicely, and I dare say that the duties devolving upon the office have grown proportionately with it. At the time Mr. Secor was our Manager, it was not expected then that he would put into the Annual Report anything but the business transactions; later it was demanded that the report of the Annual Meeting should become part of the Annual Report. That complicates matters and makes expenses a good deal more, and it is by very close handling of our funds that we are able to keep our finances at a point under those conditions so as to make no additional expense to the membership. The Annual Report expense is on the grow. I hope what is within it is worth its cost. I also revised the little pamphlet, Legal Rights, that we first had. It seemed to need more on the subject of legal aid or instructions to our members. Many of our members, especially city members, had neighbors too near for convenience to the bees, consequently something upon the line of city ordi-

nances had to be brought up. I am now trying to revise and give the members, free of charge, another revised edition of the Bee-Keepers Legal Rights. The subject of foul brood legislation and copies of the different laws now in force will be therein so that the States not having a law can see what the different States that have a law have formulated, and can from those formulate what they want. During this last winter a large portion of our States being in legislative session, I was helpful in many places in securing foul brood laws. So that the National, in a way, has helped a good many States on that line. I hope that this revised edition will be in plenty of time for these States which failed to help them, so that the more States we have now with laws, the better. With our city bee-keepers, or those living where neighbors are near, in many of those cases the bees are not directly at fault; very often it happens that the bee-keeper and his neighbor are not friends from some other cause, and the bees are indirectly brought into the deal. City ordinance troubles result. We have five on record at the present time that we are counselling with on that basis. Neighbors living near have a right to their property undisturbed, and four times since the last Annual Report there have been reports of teams of horses, or of cattle, having been stung to death; damage claims have come in, and we have had the cases to look after.

Then, as to the bees and fruit complaints, I was really surprised after all we have had on that some years ago, that it should, in this age of intelligence, become a part of our necessity to follow that same thing up seemingly harder than ever. Only two weeks ago, in one of our States not very far away, the Professor in Horticulture at the State University made the statement, and still sticks to it, that the bees in his neighborhood were destroying his fruit, and he wants \$200 damages from a bee-keeper. Again, one of our members sold some bees, and at the time of the sale also had a certificate from the inspector that those bees were inspected that day, and were free of disease. Later on, other bees were brought into the same vicinity. These bees were found to be diseased. A

damage suit is brought for \$1,500 against the man for selling that lot of bees. Can the National do anything to help him out? Now, in a way, that interests us all, if we sell bees that are free of disease and later on there can be a charge made that those bees are diseased, and it is proved that they are diseased. This case is yet in the Court, and what the result will be, I do not know.

I am sorry to own again that there are some who have advertised in our journals as queen-breeders who have received money from the National members, who never sent the queens or acknowledged the receipt of the money, and they want the National to take the matter up. There are some who have sold honey or supplies, and cannot collect. Could the National collect? I don't know that we have any jurisdiction in the case of a man's individual business accounts. It is his own dealing; he ought not to come to the National if that were the case. I would be glad, indeed, if some one else in the Association, officially, will collect some debts that I don't suppose I will ever get. That part of our Association work is almost entirely devolving upon the office of manager. I tried to establish what I thought would be of great value to the members, but would cost a little something—an information bureau. I have been sharply censured for the same several times, but I do feel that there can be some plan devised for the various members who may have something that they want to dispose of, and which somebody else may want to buy, so that through the medium of the office of manager those wants could be made known, and both satisfied at a little expense, rather than the continual issuing of a long list, "A" asking where he can buy some honey this year, not having a crop, and wanting to supply his market. I don't believe it is good policy in the interests of the Association's finances to print frequently a bulletin giving that long list of those who are not all interested; but where I have a list of members wanting to buy and wanting to sell, if a man is in California, and he wants to sell honey, I would not to a man in New York recommend this man in California, but I would look over my list and find someone in his locality that can buy from him, and I write to this party.

Then I am through with the deal. In that way I bring the two together, and they make their own contract, and do their own work. This season, although it is a short time since the honey harvest, I have been a medium by which over six carloads of honey have been unloaded for our members this fall.

Again, one of our local Associations a year ago voted, at their annual meeting, that their manager there should have the control and sale of the honey of the Association. He contracted the honey, notified the members the day it should be shipped, and the markets had changed a little, and a few of them found they could get a fraction of a cent more for their honey, and they would not stand by their manager. He was held in contract to deliver that carload of honey, and he hadn't it to deliver. One of our old members, living in the city, and seeing the situation, to relieve that man, wrote me to know what could be done, that there must be a carload of honey furnished soon, or else there would be a heavy damage claim. I looked over my list and found there were two carloads of honey, either one nearer than the carload they were buying, that could be had for the same money. I notified him, and one of the other carloads was taken in exchange, and relieved the pressure. But here, is the sad feature: If we have a local Association, and agree to do something, stay by it. Business men find they have to, and we must learn to sooner or later.

Our annual meetings bring together many old faces, and a great many new ones, and it is necessary, for the good of the entire body, geographically, that these annual meetings shall move from place to place, consequently, that must be left to a Board—our present Executive Board, perhaps, is as good as any.

I would rather, indeed, if someone who has something they want to know would ask questions upon this subject of what the National ought to do for its betterment. I am doing all I know how, or all I can do, for the Association, but the locomotive cannot pull without the power put into it. The steam must be there, and the individual members are the steam of this organization, and, consequently, I want the individual members, through

the office, to do its managing. (Applause.)

The President — Has anyone any suggestions to offer relative to the National Bee-Keepers' Association, whereby its influence may be made to reach further and do still better work?

Mr. Morgan—I would like to have Mr. France say something in regard to the time of holding the Annuals, if he does not think they could be held at a little better season than the present time?

Mr. France—We find that the best time for the Annual Meeting is considerably later in the year than this. Usually, our best attendance comes immediately after the bees are placed in winter quarters, but, in order to have large gatherings, we find that the railroad rates and hotel rates cut quite a figure. We have followed the Grand Army several times to get the railroad rate, and each time, as we have in coming here, we have found the city overcrowded, and the hotel rates enough more than usual to more than make up the difference on the railroad mileage, so that, as a part of the Board, I shall hesitate, indeed, on those conditions for future meetings.

The President—I desire to emphasize what our General Manager has said relative to the time of the meeting and the conditions under which we meet. I say, without fear of successful contradiction, that these Grand Army times of meetings, and these meetings in times of Fairs, are not true as regards the membership or less expense to those who attend these meetings. The meeting of one year ago had no reduced fares. I felt we paid pretty good sized hotel bills. The meeting was at least three times as large as this one, and we had a most excellent meeting, although not any better than this one, that I know of, from the standpoint of value upon the subjects discussed. I think, perhaps, there was a little more shaking up, and we didn't have really as pleasant a place to meet in as this. The hall provided for us would, perhaps, seat about three thousand people, and we did not need that much room for the four hundred who were there. But, I feel as our General Manager does, that we had better lay aside these conditions that we are being deceived in, and in which we think we

must follow the Grand Army, or meet at some of the State Fair times, or some other thing that is really a counter attraction. I believe, when we go to a National Association meeting, no matter when or where it shall be, that that National Association is enough for us with the calibres we carry at any one time. If we want to go to our own or somebody else's State Fair, or the World's Fair, or a National gathering of some other kind, we had better go there and make a specialty of that, but when we go to the National meeting, let us make a specialty of that, and that only. I feel we had better lay aside these counter attractions and try to live up to our views of our National Association, and in doing that I believe we will enhance its value to us, and not only to us, but to the Nation at large; hence, I feel, and I think that the Board of Directors feel very largely, that we must specialize upon this meeting of our National Association and let the National Association and its meetings be the specialty. (Applause.) We will be very glad to hear other thoughts in regard to this matter. We are here in the interests of the National Association. Let us see what we can do for it in these closing minutes.

Mr. Darby—I agree with you, in the main, most heartily, but I don't know as it would be wise to make this radical departure and just have this Society in view altogether in the future, for there may be some time some attraction that would be the means of bringing out a lot of old members who have become somewhat accustomed to the annual discussions, which are pretty much over the same ground, and old subjects re-hashed over and over. Some times some of those men may become a little bit tired, and there may be some attraction outside of that where they might come out and take on a new lease of life in behalf of the Association work. So I think that while at present, and may be in the near future, it would be well to follow this plan, possibly there might come a time when there would be some large attraction in which we would all be interested in visiting some certain place, or in which we might get a larger attendance of old-time members.

The President—Let us make the National Association that attraction.

Dr. Bohrer—I agree with what has been said with regard to holding these meetings with reference to some other meeting of a National character, or State character, that draws out a great many people. The over-charges in comparison with the railroad rates, more than over-balances the reduction, and aside from that, I notice that these attractions, these other gatherings outside, call people away, and they do not give the time and attention to the bee-keepers' meeting that they should, and that they would do if there was nothing else going on; and I believe in having this organization stiff enough and having its spinal column sufficiently stout to carry itself. When you go to a place, go there and pay your railroad fare, and pay such rates as they charge the people when there is not a great big meeting there. It seems to cost more to serve people when there is a great big crowd in town than when there are only a few. Denver is about the only city that has treated us right. Philadelphia came next. This Association ought to be getting sufficiently attractive and large enough, with the improvements and discoveries and inventions that have been made, to call out more people than give attention to the bees. They do not give it the attention they ought to. I am willing to admit it does not yield money to the average bee-keeper like the farms we have in the West, or the large stock growing farms do in the Middle East and West. If there is any good in having this Association move around in a migratorial circle, it is in this, that the business will not favor the men going very long distances. I don't go because I am expecting to make any money out of bees, but it is for the information and for pleasure, satisfaction and pastime that bee-keeping affords me. I go to it for what I hope to be able to learn and teach others. I hope the organization will widen out and get to be worth enough so that in the future it will be better attended.

The President—If this matter of the reduction of rates is so wonderful an incentive for the people who live within a radius of 200 miles—and I think I will say again within the jurisdiction of this 200-mile radius rate there are four times as many bee-keepers interested in this industry as have attended this entire convention—I say again, if

this reduction of rates and this attraction of the Fair is such a factor in bringing people together, why have we less than one-quarter of the bee-keepers represented within this State and adjoining States in attendance here? Those of us who have come one thousand miles receive no benefit whatever; it costs me just as much to come here, or more, than it would if I had come on an ordinary business trip. So I say it is not worth the consideration. I feel it is not worth considering the reduced rates and the counter attractions, and I believe the committee would do well when they place the next meeting of this Association, to place it somewhere where it shall be a National Bee-Keepers' Association, and nothing else. (Applause.)

Mr. York—I don't know whether I can say anything for the good of the meeting or not. I suppose I am the only one present who has attended every meeting during the past sixteen years. If not, I would like to know if there is anybody else here. A gentleman told me yesterday that unless we had a different kind of program he wasn't coming any more. He says, "What you want to do is to assign your subjects to men who know what they are talking about, and let them prepare their best, and let them have it here to be read." I think he is right. The last three meetings, in a measure, have been very poor as to the program. At the San Antonio meeting, the Secretary was not present, and neither a year ago, nor this year. That certainly is not right. We have a membership of 3,500, and still, in the past three years, we have not had a Secretary who has wholly done his duty. That is pretty plain talk, but it is true. It is a shame in a membership of that size that we cannot find someone who will do the duty of Secretary as it ought to be done. That is one reason why the members do not come. We ought to have a good program, and have it published a month or two in advance, so that the bee-keepers will know what they are going to have. I represent a paper, and I expect to be here, but there are a great many others who do not come for that reason.

There is one matter that the General Manager spoke about, and that is patronizing fraudulent queen-breeders. We have had several this year. I

think I have had more complaints this year than for several years. I will not give the names, but I wish hereafter, when you order queens from any dealer, you would order by postal order or money order, and if you do not get your queens put it up to the Postal authorities. I would like to see that done. We publishers cannot always tell who is honest, and some of the queen-breeders who have advertised this year have been honest in other years, but it seems this year they have not been, and I don't know what we publishers can do, except not to advertise for them any more, and that I think we will do; but we do not like to think our subscribers have to pay the expense of finding that out. I think every queen-breeder ought to return the money if he cannot send the queens. He has no business holding on to the money. He puts the publishers in a very bad position. We have to explain as to what has occurred; and one or two of them I have written to, and they absolutely refuse to answer my letters as to why they do not send the queens. It is time some of the queen-breeders stopped advertising unless they do as they advertise, and fill the orders with queens.

Mr. Brown—There is one point about the number of bee-keepers in attendance. I sent out over 400 postal cards just a few days before the convention, and most of the men I sent cards to were within a radius of 200 miles of this place, and there were very few of those cards that I sent out that did not go to bee-keepers that I have met personally at the Fairs here in the past, or at the conventions, and know that they are men that are to some extent interested in bee-keeping; and if the Fair rates and Fair are the attractions, why aren't they here? I know there are a great many of the members of our Association that have been here at our own meeting, and have been at the Fair the rest of the time; there are a number of men who are interested in the Fair locally, interested in the exhibits, and who cannot attend these meetings. I think the best time to pick for the bee-keepers to meet is a time when there won't be anything else to do but attend the meeting, and the city will pay more attention to it. If even the number of bee-keepers that have been at this convention went in

a body around town, where there was nothing else to attract attention, they would be noticed, and it would be enough so that it would make some difference in that town; the people would say, I didn't know there were so many bee-keepers. But there are so many other people in town that a great many have said to me, "You haven't got any bee-keepers here, have you?" They say, "I have seen two or three badges;" and that is all they know. Another point is, we cannot make the places where we take our meals a common point of meeting to any extent, and we cannot make our places of lodging in any way close where we would be together; and there are a great many times when conversations at the dinner table, or conversations in the evening after the convention, will bring a point to some individual that is worth a whole lot to him, and it certainly does more in promoting the good fellowship of the organization than anything else that can be done. One thing that is needed is more good fellowship in the Bee-Keepers' Association. It always seems to me that the point of a fifty cent rate for membership in the National ought to be cut off. If a man is interested enough in the National Bee-Keepers' Association, and if a few men over the country would get it into their heads to boost the National, and get every man that they could that was interested in bees, to come inside as a member of the National, and make those dues enough so that they would amount to something, the National would have money enough back of it to do something. The census of 1900 shows 128,000 farms in the State of Iowa, that have bees on them; out of that number there are hardly 100 men in the State of Iowa belonging to the National, and there were a good many less before we started the local organization here. A thing I would be in favor of would be to get higher dues in the Association and make members of the men who have some interest in it. If you pay enough for a thing you have got interest enough in it to talk up what you have paid for. If you don't pay anything, you say, "Well, I don't care; I have only paid a little bit in there; it doesn't amount to anything;" and that is as far as it goes.

The President—About a year ago I

think you held your local Association meeting in this building, did you not?

Mr. Brown—Yes.

The President—How does the attendance of this meeting and the attendance at your local meeting compare?

Mr. Brown—We had more men, I believe, at the local Association at every meeting than there are here. There were as many people from this city as there are on the south side of the room now, and a great many of them who were simply interested in the natural history of the bee, or something of that kind, and many that had only one or two colonies. At the time we had the meeting, there was nothing particular going on in the town. We picked out a date that would be convenient for the people to come here. I know at several of the meetings we had a good deal larger attendance than we have in the room at the present time, and that was supposed to be only a local Association.

The President—That is the surprising feature to me, that your Association meeting should be so much more attractive than an Association meeting of a National character, and I am at a loss to know why it is so, unless it is the reduced rates and the Fair.

Mr. Miles—From a practical bee-man's standpoint there was one thing that struck me in this locality, and that was in regard to the season when these meetings are held, and I think that has something to do with the fact that this local Association had a larger attendance, as I can corroborate; they held their meeting at a time when the bee-keeper was through with his work and had time to go. This meeting comes just at the time that if a person had a crop of honey he could not have been here. It takes about a week for me to come here, even if I am nearby, and my time is worth more to me than all the other expense. I would rather pay out quite a little bit more in money later on in the fall or winter than waste this amount of time.

At this point, Dr. Phillips addressed the meeting, but requested that the reporter make no record of what he said.

Mr. Goddard—I want to endorse all that Dr. Phillips has said here. I am virtually a new man in the bee business. The way I got notice of your

Association was this: I bought some bees from a man, and he says, "I have got a lot of Bee Journals and other stuff I will dump in if you have any place to put them." And he brought a barrel of old Bee Journals and stuff to my place, and I sorted it over, and I ran across one of your Annual Reports, and I sent in my membership fee right away. That Annual Report alone to me was worth more than the dollar it cost me to become a member of your Association. I don't believe it is necessary for this Association to divide the fees or dues with the local Association; I don't believe it ought to divide the dollar with the State Association, or with the Honey Producers' Association, or any other association. I believe you ought to have your dollar, and I believe you ought to have enough of those Annual Reports so that you can send them to the bee-keepers in the State, those that are not members as well as to the members. I will venture to say there is not one member in ten in this State, or in South Dakota, who knows the benefits of this Association, or what he could learn, and which he would learn if it were advertised, and then you would get your money.

Dr. Bohrer—With all due respect to the gentlemen who have made remarks concerning the papers, I have heard papers read at bee-keepers' associations and medical associations, which were not worth the paper they were written on. If we have papers properly prepared and brought here and read and discussed, it is going to be a valuable feature of the Association. But, I know of no well conducted organization, medical or bee-keepers' association where the membership is entirely prohibited from dropping questions upon the desk or in a box to be answered. At the same time, there are persons who do not know the rules of discussion, and know nothing about parliamentary usage when they are talking, and they say a whole lot about nothing. I am not anxious to defend a thing of that kind. I don't think that you would like it yourself if you adopted that and excluded everything of that kind. We cannot anticipate everything bee-keepers may want to know when we come into an assembly of this kind. We often find men and women who can answer to our satisfaction privately, but may

not always be able to do so publicly, and if the question is read before the society, somebody may be able to answer it to our entire satisfaction. To make it the head and shoulders of an Association such as this, I don't believe in that, nor do I believe in any kind of grand-stand performance. I don't believe in a man getting up and giving a lecture upon any subject.

Mr. France—In regard to the lack of advertisement of this and some of our other meetings, I want to say it is not expected that the manager has that in charge, and this deficiency this year, and the lack of attendance and lack of program is because the Secretary's work has not been done. At the last moment, long after it ought to have been all done and advertised, I outline a few topics, and it has been in that brief way conducted. I think this committee from the different States in meeting today has recommended names for the incoming Secretary, who will look after that part of it.

Now, in regard to the Annual Reports, to the other members they may not be of very much importance, but I will own that I value the different books in my library at very much less than I value these Annual Reports. For but a few pennies you can put in a bound volume that will go into your library, several numbers of the National Bee-Keepers' Association Reports. This volume I have here is from 1903 to 1908, including all the pages of advertisements. The whole thing is in a bound volume, and only cost me 50 cents. There are back numbers of nearly all those years in my care today. I don't want to see them thrown away; I believe they are worth something, and to the members who want them—they are in paper form—if you will make known that you want them, I will put the different numbers together in form, and you can get a binder at your own place to put them in shape for you at little expense.

The President—Is there anything further for the good of the order?

Dr. Bohrer—Unless there is some important business, I would like to say that the most of us have to leave for long distances shortly, and I would like to see us adjourn for a couple of hours before train time, so that we can

become acquainted with each other and associate together.

Mr. York—There is a matter that should have been attended to when I made the report of the Committee on Nominations, but it was so near lunch time we didn't want to stop. I wish to move, along the line of making nominations, that the President appoint a committee of three, of which he shall be a member, to put that report into such form that it may go before the members as an amendment to our Constitution, so that another year we can do the same thing we have done today.

Mr. Poppleton seconded the motion. The President put the motion, which, on a vote having been taken, was declared carried.

The President appointed as the committee, Messrs. York and France, and the President.

The President—Inasmuch as we are having the matter of closing in hand, perhaps we had better take up a couple of resolutions which we must not forget to act upon before we leave.

Resolved, That we vote the thanks of the National Bee-Keepers' Association to the City Council for the use of their meeting hall.

Resolved, That we express our most hearty congratulations to the local committee and to the Young Men's Christian Association for their consideration.

Mr. Goddard moved, seconded in many places, that the resolutions as read be adopted.

The President put the motion, which, on a rising vote having been taken, was declared carried.

Dr. Phillips—I spoke this morning a little about the work of getting a distribution of the two bee diseases in the United States. I shall appreciate it very much if the members here present will help us out next year by sending us samples from localities where we have not yet got them, and also sending us the names of the bee-keepers. We need that information; we have National lists we want to get into the hands of the people. We want to get circulars and things of that kind into their hands, and we need the help of every one that can give us any.

The President—The Department at

Washington will furnish receptacles, and furnish you with everthing necessary, and with the necessary franks, so that it will not even cost you a postage stamp. They are very anxious, indeed, to get these samples, and whether you know about it or whether you don't send them to them, and perhaps they can tell you something. I feel we are under obligation to our National officers to do those things.

Mr. York invited the members of the National and all present to attend the annual meeting of the Chicago and Northwestern Association, to be held in Chicago the first week in November.

Mr. Darby—I wish at this time to urge every member of the local Association and every bee-keeper in your State to work to get an appropriation to carry out your foul brood law. Your sister State, Missouri, is very much interested in this matter, and if you get your law in working order,

it may be that, working together, we can accomplish something, whereas, working alone, we are working against odds, and we would like you to try to bring everything in your power to bear on your Legislature to grant you an appropriation to continue your work.

Mr. Hall—I have had two or three letters from our Governor during the summer, with reference to getting this Foul Brood Bill before them, and I don't think Mr. Darby need worry his mind very much about us getting our appropriation very soon. At least, that has been the idea our Governor has given me in his letters.

Dr. Bohrer—If there is nothing further, Mr. Chairman, I move we adjourn sine die.

Mr. France—I second the motion.

The President put the motion, which, on a vote having been taken, was declared carried, and the meeting adjourned sine die, at 3:30 p. m.

LIST OF MEMBERS

—OF THE—

Illinois State Bee-Keepers' Association

FOR 1910.

(Where no State is given "Illinois" is understood.)

NAME AND ADDRESS.	No. of Colonies in 1909.....	Pounds of Comb Honey in 1909.....	Pounds of Extracted Honey in 1909.....
Anderson, Jas. L.—Harvard, Ill.....	112	1700	300
Andrews, T. P.—Farina, Ill.....	73	....	3100
Arnd, H. M.—191 Superior St., Chicago.....	....	....	....
Augenstein, A. A.—Dakota, Ill.....	....	....	....
Bagley, Miss Pet—Putnam, Ill.....	....	....	....
Baker, A. H.—Durand, Ill.....	....	....	....
Baldrige, M. M.—St. Charles, Ill.....	....	....	....
Bamberger, John—Freeport, Ill.....	....	....	....
Barkemeyer, B. D.—Oak Park, Ill.....	....	....	....
Baxter, E. J.—Nauvoo, Ill.....	....	....	....
Beardsley, E. H.—Princeton, Ill.....	....	....	....
Becker, Charles—Pleasant Plains, Ill.....	....	....	....
Beeler, David S.—R. 5, Springfield, Ill.....	....	....	....
Beidler, W. H.—R. 6, Freeport, Ill.....	....	....	....
Benjamin, W. W.—Box 76, Metropolis, Ill.....	....	....	....
Benson, August—R. 2, Prophetstown, Ill.....	100	1700	....
Bercaro, Geo. W.—Eltoro, Orange Co., Cal.....	....	....	....
Bevier, M.—Bradford, Ill.....	27	....	....
Bishop, W. W.—Virginia, Ill.....	....	....	....
Black, S. N.—Clayton, Ill.....	....	....	....
Blocher, D. J.—Pearl City, Ill.....	150	....	....
Blume, W. B.—Norwood Park Sta., Chicago.....	....	....	....
Boardman, Mrs. E. E.—620 S. Douglas Ave., Springfield..	....	....	....
Bodenschatz, Adam—Lemont, Ill.....	....	....	....
Bohrer, Dr. G.—R. 2, Lyons, Kans.....	....	....	....
Bolt, R.—R. 3, Fulton, Ill.....	92	1500	150
Bowen, Clyde—Linden, Ill.....	....	....	....
Bowen, J. W.—Jacksonville, Ill.....	....	....	....
Boyden, Ralph W.—Jeffrey Bldg., Inst. Place, Chicago...	....	....	....
Boyden, R. W.—Chicago, Ill.....	....	....	....
Briggs, Bert B.—Shirland, Ill.....	35	300	350
Bronell, L. F.—Plano, Ill.....	6	50	....
Brown, E. W.—Mourton Park, Ill.....	....	....	....
Brubaker, W. H.—R. 3, Freeport, Ill.....	....	....	....

NAME AND ADDRESS.	No. of Colonies in 1909.....	Pounds of Comb Honey in 1909.....	Pounds of Extracted Honey in 1909.....
Bull, John C.—Valparaiso, Ind.....	.....	.....	.....
Caldwell, C. S.—P. M. Elvaston, Ill.....	112	.....	320
Campbell, Grover—R. 2, Quincy, Ill.....	.....	.....	.....
Candler, Miss M.—Cassville, Wis.....	.....	.....	.....
Carrico, John G.—Barnett, Ill.....	.....	.....	.....
Cavanagh, F. B.—Hebron, Ind.....	.....	.....	.....
Cave, Geo. W.—Kirkwood, Ill.....	146	.....	.....
Cherry, Thos. M.—Quincy, Ill.....	.....	.....	.....
Cleveland, Frank—Prophetstown, Ill.....	.....	.....	.....
Cook, A. N.—Woodhull, Ill.....	.....	.....	.....
Coppin, Aaron—Wenona, Ill.....	.....	.....	.....
Cremers, L. H.—E. Dubuque, Ill.....	168	75	1200
Crim, S. T.—Dawson, Ill.....	.....	.....	.....
Crosley, E. G.—Farina, Ill.....	.....	.....	.....
Crotzer, A. S.—Lena, Ill.....	.....	.....	.....
Cunningham, J. C.—Box 119, Streator, Ill.....	.....	.....	.....
Dadant, C. P.—Hamilton, Ill.....	.....	.....	.....
Dadant, H. C.—Hamilton, Ill.....	.....	.....	.....
Dadant, L. C.—Hamilton, Ill.....	.....	.....	.....
Dadant, M. G.—Hamilton, Ill.....	.....	.....	.....
Deem, B. L.—Colona, Ill.....	40	100	400
Diebold, A. J.—Seneca, Ill.....	39	125	600
Dollinger, Henry—R. 1, Lockport, Ill.....	50	8	.....
Donyes, G. F.—Durand, Ill.....	.....	.....	.....
Dowdy, John S.—Atlanta, Ill.....	.....	.....	.....
Downey, Elmer E.—Putnam, Ill.....	.....	.....	.....
Drorak, John, Jr.—Algonquin, Ill.....	.....	.....	.....
Duly, H. S.—R. 4, St. Anne, Ill.....	.....	.....	.....
Dyon, Clarence—St. Anne, Ill.....	.....	.....	.....
Earnest, David P.—R. 1, E. Alton, Ill.....	.....	.....	.....
Eidmann, E. C.—407 Portland Ave., Belleville, Ill.....	.....	.....	.....
Emmons, A. I.—Greenfield, Ill.....	54	.....	.....
Enger, A. J.—824 E. Jefferson St., Morris, Ill.....	.....	.....	.....
Engle, Tobias—Freeport, Ill.....	.....	.....	.....
Enigenburg, J.—Oakglen, Ill.....	.....	.....	.....
Eve, George—Minonk, Ill.....	.....	.....	.....
Falconer, W. W.—1700 N. 48th Ave., Chicago.....	.....	.....	.....
Ferguson, Mr. L. R.—Harvey, Ill.....	.....	.....	.....
Ferguson, Mrs. L. R.—Harvey, Ill.....	.....	.....	.....
Finger, C. A.—Marissa, Ill.....	27	20	240
Flanagan, E. T.—Belleville, Ill.....	100	.....	500
Fluegge, F.—Elmhurst, Ill.....	.....	.....	.....
Fosse, E. P.—Marion, Ill.....	50	.....	.....
Foster, John—Wenona, Ill.....	.....	.....	.....
Frank, J. C.—R. 1, Davis, Ill.....	220	.....	2500
Frank, John C.—Dodge City, Kans.....	.....	.....	.....
Gandy, W. C.—Ritchey, Ill.....	6	400	.....
Garde, Benj.—R. 2, Box 49, Worden, Ill.....	.....	.....	.....
Glasser, Wm.—Dakota, Ill.....	.....	.....	.....
Glassner, Mrs. J. J.—Chicago.....	.....	.....	.....
Grabbe, F.—Libertyville, Ill.....	.....	.....	.....
Grant, W. W.—Marion, Ill.....	13	7	160

NAME AND ADDRESS.

	No. of Colonies in 1909.....	Pounds of Comb Honey in 1909.....	Pounds of Extracted Honey in 1909.....
Gray, Robert—Box 73, Virden, Ill.....	25	375	....
Gray, W. H.—Chillicothe, Ill.....	90	500	400
Gross, S. T.—Atwood, Ill.....	....	....	....
Group, Jno. F.—Franklin Grove, Ill.....	20	25	....
Hagler, H. T.—Girard, Ill.....	....	....	....
Haines, C. A.—Box 303, E. St. Louis, Ill.....	65	150	300
Halbrook, Mrs. R. B.—R. 2, Elgin, Ill.....	....	....	....
Hall, E. L.—St. Joseph, Mich.....	....	....	....
Hansel, Charlie—Minooka, Ill.....	20	700	50
Hansell, Will—Box 14, Minooka, Ill.....	27	600	250
Harris, W. B.—Mounds, Ill.....	10	....	....
Hartman, Fred E.—R. 2, Troy, Ill.....	5 Little honeydew		
Hastings, Chas.—Decatur, Ill.....	....	....	....
Hawthorne Farms—Barrington, Ill.....	57	1475	225
Haych, Bernard—R. 6, Quincy, Ill.....	....	....	....
Heinze, Herman—R. 2, Edwardsville, Ill.....	....	....	....
Heinzel, Albert Q.—Lincoln, Ill.....	21	150	....
Helse, Paul—Warsaw, Ill.....	12	200	100
Hettel, Mathias—Marine, Ill.....	100	50	1160
Hill, H. D.—Lima, Ill.....	170	....	....
Hinderer, Frank—Frederick, Ill.....	....	....	....
Hintz, August J.—Lemont, Ill.....	....	....	....
Hinze, Herman—Edwardsville, Ill.....	....	....	....
Hitch, Rev. H. F.—R. 1, Harrisburg, Ill.....	24	....	....
Hitt, Samuel—Elizabeth, Ill.....	....	....	....
Holdener, J. D.—Carlyle, Ill.....	39	736	500
Hohner, Peter—R. 1, Henry, Ill.....	....	....	....
Holmes, Miss H. C.—Belrive, Ill.....	19	200	106
Holterman, R. F.—Bradford, Ont., Can.....	....	....	....
Horstman, M. H.—6759 Morgan, Chicago.....	....	....	....
Huffman, Jacob—Monroe, Wis.....	....	....	....
Hyde, W. H.—New Canton, Ill.....	....	....	....
Johnson, Jno. A.—Altona, Ill.....	....	....	....
Johnson, J. P.—Box 61, Elburn, Ill.....	5	175	....
Jones, Geo. W.—West Bend, Wis.....	....	....	....
Kanneberg, C. F.—Oak Park, Ill.....	....	....	....
Kendall, Frank R.—Lock Box 35, Byron, Ill.....	50	....	....
Kendall, Jay S.—Chemung, Ill.....	12	200	....
Kennedy, B.—Cherry Valley, Ill.....	35	600	....
Kennedy, Miss L. C.—R. 11, Curran, Ill.....	70	75	....
Kennicatt, E. E.—Glenview, Ill.....	....	....	....
Kerley, Josiah—Anna Hospital, Southern, Ill.....	1	....	36
Kildow, A. L.—Putnam, Ill.....	....	....	....
Kile, Henry—Mason City, Ill.....	....	....	....
Kimmez, F. L.—Morgan Park, Ill.....	....	....	....
Kluck, N. A.—Lena, Ill.....	....	....	....
Knox, C. S.—Round Grove, Ill.....	....	....	....
Kuczynski, John F.—Oglesby, Ill.....	13	200	100
Kurr, J. T.—Louisville, Ill.....	40	400	....
Lampman, C. W.—Rockton, Ill.....	20	....	....
Lange, J. W.—Thawville, Ill.....	....	....	....
Lathrop, Harry—Bridgeport, Wis.....	....	....	....

NAME AND ADDRESS.	No. of Colonies in 1909.....	Pounds of Comb Honey in 1909.....	Pounds of Extracted Honey in 1909.....
Laxton, J. G.—Lyndon, Ill.....	.....	.....	.....
Lebkuechner, Harry R.—1728 Summerdale Ave., Ravens- wood Sta., Chicago.....	.....	.....	.....
Lee, H. W.—Pecatonica, Ill.....	.....	.....	.....
Leffer Bros.—Hamilton, Ill.....	.....	.....	.....
Lehmann, Gustav—3262 Lincoln Ave., Chicago.....	8	50	.....
Lind, M. H.—Baders, Ill.....	110	500	500
Lindgram, G. A.—Bishop Hill, Ill.....	.....	.....	.....
Lyman, W. C.—Downers Grove, Ill.....	.....	.....	.....
Macklin, Chas. G.—Morrison, Ill.....	115	400	400
Mathiot, E. H.—R. 3, Freeport, Ill.....	.....	.....	.....
May, Fred H.—Box 52, Meredosia, Ill.....	.....	.....	.....
Mayville, John P.—Volga, Iowa.....	.....	.....	.....
Meise, F. A.—Coatsburg, Ill.....	75	.....	1000
Menkhausen, Louis T.—Belleville, Ill.....	.....	.....	.....
Michell, Philip A.—Forkland, Ala.....	.....	.....	.....
Miller, Dr. C. C.—Marengo, Ill.....	122	.....	.....
Miller, W. C.—Box R, Ottawa, Ill.....	40	1000	.....
Moore, Herman F.—Park Ridge, Ill.....	.....	.....	.....
Moore, W. B.—Altoona, Ill.....	.....	.....	.....
Mottaz, A.—Utica, Ill.....	65	600	6000
Muchleip, H.—Apple River, Ill.....	70	.....	.....
Mundorff, C. H.—Kirkwood, Ill.....	.....	.....	.....
McCullough, John T.—Centralia, Ill.....	37	50	.....
McCune, Thos.—Dixon, Ill.....	.....	.....	.....
McElfresh, Wm.—P. O. Springfield, Ill.....	14	.....	.....
McKown, C. W.—Gilson, Ill.....	96	200	1500
Nelson, Andrew N.—Altona, Ill.....	.....	.....	.....
Ness, L. L.—Morris, Ill.....	200	4000	500
Newcomer, Sam. M.—Forreston, Ill.....	60	.....	300
Norberg, Peter J.—Spring Valley, Ill.....	160	.....	3000
Null, Wm. D.—Prairieville, Hall Co., Ala.....	.....	.....	.....
Nydegger, John—Danville, Ill.....	140	.....	.....
Oakes, Lannes P.—Joppa, Ill.....	23	500	.....
Offner, Fred—Monee, Ill.....	85	1500	.....
Olson, John—Davis, Ill.....	.....	.....	.....
Ostermeier, John—Mechanicsburg, Ill.....	.....	.....	.....
Owen, Chas.—755 Alma Ave., Austin Sta., Chicago.....	.....	.....	.....
Parker, Solomon—Harrisburg, Ill.....	.....	.....	.....
Payne, John W.—R. 1, Georgetown, Ill.....	20	250	370
Peterson, C. B.—6959 Union Ave., Chicago.....	.....	.....	.....
Peterson, F. E.—R. 31, Edelstein, Ill.....	.....	.....	.....
Piper, G. M.—Chillicothe, Ill.....	115	.....	2000
Poindexter, James—Bloomington, Ill.....	.....	.....	.....
Pyles, I. E.—Pupnam, Ill.....	.....	.....	.....
Ramm, T. W.—Bewdley, Ont., Can.....	.....	.....	.....
Ravnaas, Jacob—Rochelle, Ill.....	.....	.....	.....
Reynolds, W. G.—1956 Ogden Ave., Chicago.....	.....	.....	.....
Rigg, R. T.—Auburn, Ill.....	50	.....	.....
Riley, W.—Breeds, Ill.....	.....	.....	.....
Ritter, W.—Genoa, Ill.....	24	60	85
Robbins, Daniel E.—Payson, Ill.....	45	all honey dew	.....

NAME AND ADDRESS.

NAME AND ADDRESS.	No. of Colonies in 1909.....	Pounds of Comb Honey in 1909.....	Pounds of Extracted Honey in 1909.....
Rohakaster, Herman—Fruit, Ill.....	.....	.....	.....
Russow, Gottlieb—3029 N. Leavitt, Chicago.....	.....	.....	.....
Sauer, G. L.—Polo, Ill.....	105	30	.....
Sauer, John—R. 5, Springfield, Ill.....	.....	.....	.....
Saxe, A. J.—206 LaSalle, Chicago.....	.....	.....	.....
Schmertman, Louis—R. 1, Freeport, Ill.....	.....	.....	.....
Scroggins, A. C.—R. 3, Mt. Pulaski, Ill.....	22	400	.....
Seastream, Geo.—Pawnee, Ill.....	60	100	2100
Secor, Eugene—Forest City, Iowa.....	50	.....	.....
Secor, W. G.—Greenfield, Ill.....	.....	.....	.....
Seibold, Jacob—Homer, Ill.....	25	300	F brood
Shawver, Oscar—Casey, Ill.....	30	500	.....
Shupe, Frank—Mazon, Ill.....	84	1100	480
Simpson, Wm.—Meyer, Ill.....	.....	.....	.....
Slack, Geo. B.—Mapleton, Ill.....	59	500	.....
Smith, John T.—Altona, Ill.....	.....	.....	.....
Snell, F. A.—Milledgeville, Ill.....	100	60	1400
Stanley, Arthur—Dixon, Ill.....	.....	.....	.....
Stephens, P. J.—1110 Acc. St., Galesburg, Ill.....	.....	.....	.....
Stewart, Henry—Prophetstown, Ill.....	.....	.....	.....
Stewart, W. H. H.—Emerson, Ill.....	.....	.....	.....
Stone, Jas. A.—R. 4, Springfield, Ill.....	62	.....	200
Switzer, Samuel—St. Charles, Ill.....	.....	.....	.....
Taylor, C. E.—Custer Park, Ill.....	15	250	.....
Thompson, J. E.—Carpenterville, Ill.....	.....	.....	.....
Thullen, P. J.—102 W. 110 Place, Chicago.....	.....	.....	.....
Trickey, H.—Reno, Nev.....	.....	.....	.....
Truby, S. K.—Maple Park, Ill.....	.....	.....	.....
Ulrich, G. E.—Campus, Ill.....	12	150	.....
Van De Wiel, Anton—E. Dubuque, Ill.....	6	.....	.....
Vawter, F. E.—Industry, Ill.....	.....	.....	.....
Vogel, Henry—Galena, Ill.....	80	60	.....
Wagner, F. M.—Quincy, Ill.....	34	all honey dew	.....
Walker, Byron—Clyde, Ill.....	.....	.....	.....
Weckerle, Mrs. Anna—12345 Wallace St., W. Pullman...	.....	.....	.....
Werner, Louis—Edwardsville, Ill.....	.....	.....	.....
Wheeler, J. C.—Oak Park, Ill.....	.....	.....	.....
Whitmore, Dr. N. P.—Gardner, Ill.....	.....	.....	.....
Whitmore, H.—Momence, Ill.....	18	600	.....
Whitmore, N. P.—Box 334, Gardner, Ill.....	.....	.....	.....
Whitney, W. M.—Evanston, Ill.....	.....	.....	.....
Widicus, Danl.—St. Jacob, Ill.....	.....	.....	.....
Wiegand, Adam—1575 Claybourn Ave., Chicago.....	.....	.....	.....
Wilcox, F.—Manston, Wis.....	.....	.....	.....
Wilkie, J. D.—R. 2, Chicago Heights, Ill.....	7	40	.....
Willham, R. C.—802 Hall Ave., Edwardsville, Ill.....	.....	.....	.....
Winter, I. V.—N. Aurora, Ill.....	.....	.....	.....
Wilson, Miss Emma—Marengo, Ill.....	.....	.....	.....
Yoos, Geo. F.—Sta. 1, 215 W. Green St., Centralia, Ill....	.....	.....	.....
York, Geo. W.—146 W. Superior St., Chicago.....	.....	.....	.....
Young, A. O. K.—Box 264, Girard, Ill.....	.....	.....	.....
Zeller, Mrs. Caroline—R. 35, Box 48, Peoria, Ill.....	8	50	.....

In the foregoing Statistical Report, nearly all the honey reported was honey dew honey, and some of the members would report nothing because they said it was honey dew and not fit to report.

RETURN OF PETITIONS.

The petitions to the next Legislature (47) that have been returned up to April 1, 1910, for a Foul Brood Law for Illinois, rank in the following order for the number of signers—naming only the seven highest Senatorial Districts:

35th District.....	59	Signers
30th "	44	"
20th "	43	"
45th "	30	"
47th "	28	"
12th "	28	"
8th "	22	"

The parties sending in a list of more than ten names are:

Thos. McCune, 35th District.....	40	Names
Louis Werner, 47th District.....	28	"
R. F. Rigg, 45th District.....	28	"
Frank Shupe, 20th District.....	27	"
M. H. Lind, 30th District.....	25	"
J. C. Frank, 12th District.....	24	"
Jay S. Kendall, 8th District.....	19	"
W. B. Moore, 43d District.....	16	"
Geo. M. Piper, 37th District.....	16	"
J. F. Group, 35th District.....	15	"
H. Whitmore, 20th District.....	13	"
A. J. Diebold, 39th District.....	12	"
O. S. Biggs, 30th District.....	11	"

We hope, when the secretary makes his report at the annual meeting next November, he will be able to report many larger lists than above of petitioners for the Foul Brood Law for Illinois.

The list of members was placed in the back of the report so that we would be able to record the names of members joining up to the latest date of the finishing of the report, April 12, 1910.

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